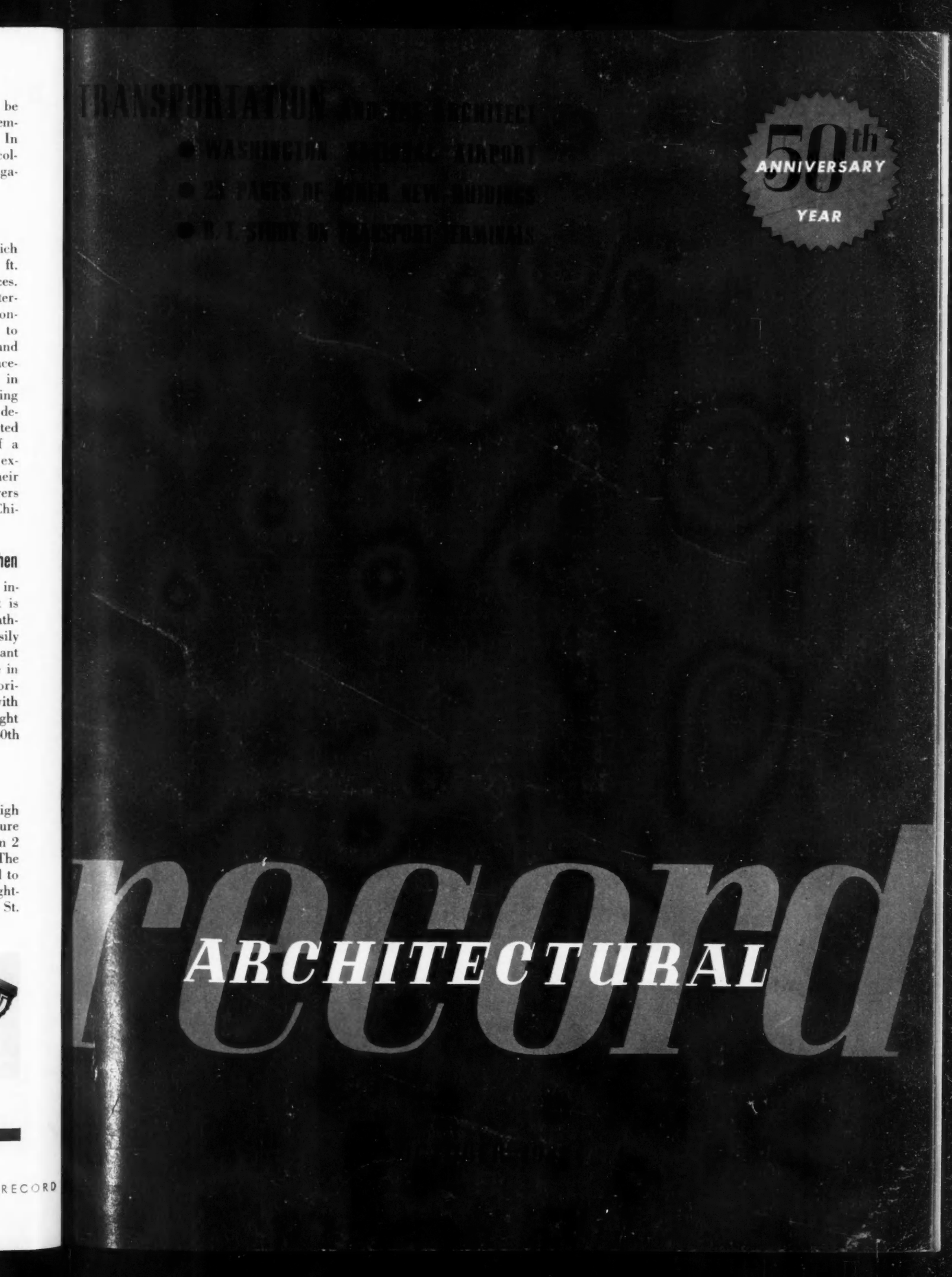
TRANSPORTATION
50th
ANNIVERSARY
YEAR
record
ARCHITECTURAL

3 WAYS TO MAKE A "HOUSE" A BETTER "HOME"

...with Anaconda Electro-Sheet Copper!

1 CONCEALED FLASHING AROUND WINDOWS & DOORS
Thin, for low cost, easy application, yet strong and durable for complete protection against infiltration of air and moisture. That's part of the story of Anaconda "Electro-Sheet" Copper, used here as concealed flashing around window frames. It is absolutely rustproof and will not dry rot regardless of time. With a suitable backing bonded to it, "Electro-Sheet" comes in long rolls of varying widths—is extremely flexible and easy to handle.

2 DAMPCOURSE AND APRON BEHIND BRICK VENEER
Adequate protection against moisture is always to be sought at this vulnerable point. Proof that Anaconda "Electro-Sheet" Copper provides just such protection is found in recent tests made on sheathing papers. Results showed that metallic products, including four "Electro-Sheet" types, were the only materials impervious to water and water vapor both before and after accelerated aging.

3 DAMP-PROOFING FOR FOUNDATION WALL
Here "Electro-Sheet" provides a low-cost "metallic" answer to a common water-proofing problem. The photo shows how easily "Electro-Sheet, when suitably backed, can be handled. It's easy to install because it is almost as flexible as paper, yet highly resistant to kinking, breaking or tearing. 4195

ANACONDA
from mine to consumer

"ELECTRO-SHEET"
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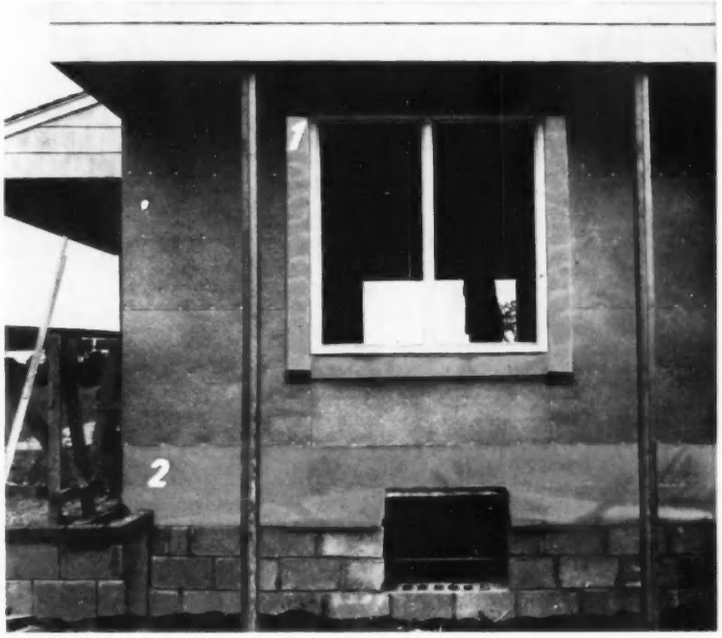
General Offices: Waterbury, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: Anaconda American Brass Ltd., New Toronto, Ont.



The house shown here is in Central Islip, New York. The architect was Eugene Marten; the contractor, Harold McGowan. This "Electro-Sheet" is Copper-Armored Sisalkraft—made by The Sisalkraft Co., 205 West Wacker Drive, Chicago.

R. E. Anderson was the architect for this work in Wayne, Illinois. Herman Wendler was the contractor. This "Electro-Sheet" product is also Copper-Armored Sisalkraft.

ARCHITECTURAL RECORD

COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

VOLUME 90 — OCTOBER 1941 — NUMBER 4

Next Month

WITH more than 600,000 small houses needed to shelter workers in defense industries—speedy construction of which is assured by new priorities developments (see page 39 of this issue)—the November RECORD will be particularly timely and interesting. For its main topic is houses—with emphasis on those aspects of defense building which are of current technical importance.

To keynote the issue we've been fortunate in enlisting the active interest of Mrs. Samuel I. Rosenman, head of the National Committee on the Housing Emergency, indefatigable housing-fact-finder and vigorous advocate of good project planning. She has developed an article that sets forth the more challenging objectives of defense housing and discusses economic and social planning for the long term as well as the present.

November's Fiftieth Anniversary Feature—and a RECORD "exclusive"—is the story of how an entire New Hampshire town was moved to a new location, replanned and completely rebuilt. As an outstanding example of co-operative Yankee enterprise and farsighted planning it will be graphically presented as an ideal for defense communities and for other housing projects which will be developed after the emergency.

The Building Types Study will report the standards of planning, design and construction that are emerging from defense activity on the housing front. It will cover a wide range of housing units and—with Time-Saver Standards on vital units of mechanical equipment—will provide designers with a practical guide to approved defense housing practice.

All in all the RECORD next month will be a magazine to preserve and enjoy, to study and to use. And to round it out will be a selection of small house designs—Colonial, Modern and In-Between—to warm the heart of every residential architect.

TRANSPORTATION AND THE ARCHITECT

TRANSPORTATION—AN EXPANDING FIELD FOR MODERN BUILDING 43
By Gilmore D. Clarke, ASLA

LEADERS OF THE TRANSPORTATION INDUSTRY DISCUSS PLANNING FOR TOMORROW'S NEEDS 47

NEW BUILDINGS
- Washington National Airport 49
- Pennsylvania Railroad Ticket Office, Chicago 58
- Department Store Warehouse, Philadelphia 60
- Schaefer Distribution Station, Fairfield, Conn. 62
- St. Elmo-Tel, Austin, Texas 63
- Commerce Garage, Kansas City 67
- Parking Deck, Detroit 68
- Theater and Shops, Beaumont, Texas 70
- Drive-In Flower Shop, Los Angeles 71
- Super Markets, Los Angeles 72
- Houses 74

★

MOTOR TRANSPORT TERMINALS . . . A BUILDING TYPES STUDY

BUSSES, TRUCKS AND ARCHITECTURE 81
By Professor John S. Worley

BUS TERMINAL DESIGN AND CONSTRUCTION 83
By Harry S. Pack

TRUCK TERMINALS BENEFIT FROM LOGICAL PLANNING 90
By Frank G. Lopez Jr.

TIME-SAVER STANDARDS 97

★

BEHIND THE RECORD 7
WITH RECORD READERS 10
NEWS FROM WASHINGTON 16
TRENDS IN BRIEF 22
REVIEWS OF CURRENT LITERATURE 28
PRIORITIES TO SPUR HOUSE BUILDING 39
NEWS OF MATERIALS AND EQUIPMENT 104
ARCHITECTURE MEETS ADVERTISING 106
DEFENSE HOUSING CRITICAL LIST 118
INDEX OF ADVERTISEMENTS 142

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Editorial Director: Thomas S. Holden. *Managing Editor*: Roger Wade Sherman, AIA. *Associate Editors*: Frank G. Lopez Jr., George A. Sanderson, Emerson Goble. *Art Director*: Gene Hawley. *Desk Editor*: Catherine Woolley.

ARCHITECTURAL RECORD (combined with *American Architect and Architecture*) is published monthly by F. W. DODGE CORPORATION, 119 West 40th Street, New York. Thomas S. Holden, Pres.; Howard J. Barringer, Vice Pres. and Treas.; Irving W. Hadsell, Vice Pres.; H. Judd Payne, Vice Pres.; Chauncey L. Williams, Vice Pres.; Sanford D. Stockton Jr., Secy.; Walter F. De Saix, Asst. Treas.; Edwin H. Freed, Asst. Treas. Member Audit Bureau of Circulations and Associated Business Papers, Inc. ARCHITECTURAL RECORD is indexed in Reader's Guide, Art Index, and Industrial Arts Index. Subscription rates: United States and Possessions, Canada, Cuba, Mexico, Central and South America, $3 the year, $5 for two years, $6 for three years; elsewhere, $5 the year; single copy, $1. *Circulation Manager:* Robert C. MacDougall.

Manuscripts, photographs, and drawings which conform to RECORD'S editorial aims are welcomed. Every effort will be made to return material (if accompanied by stamped, addressed envelopes); but the editors will not be responsible for losses.

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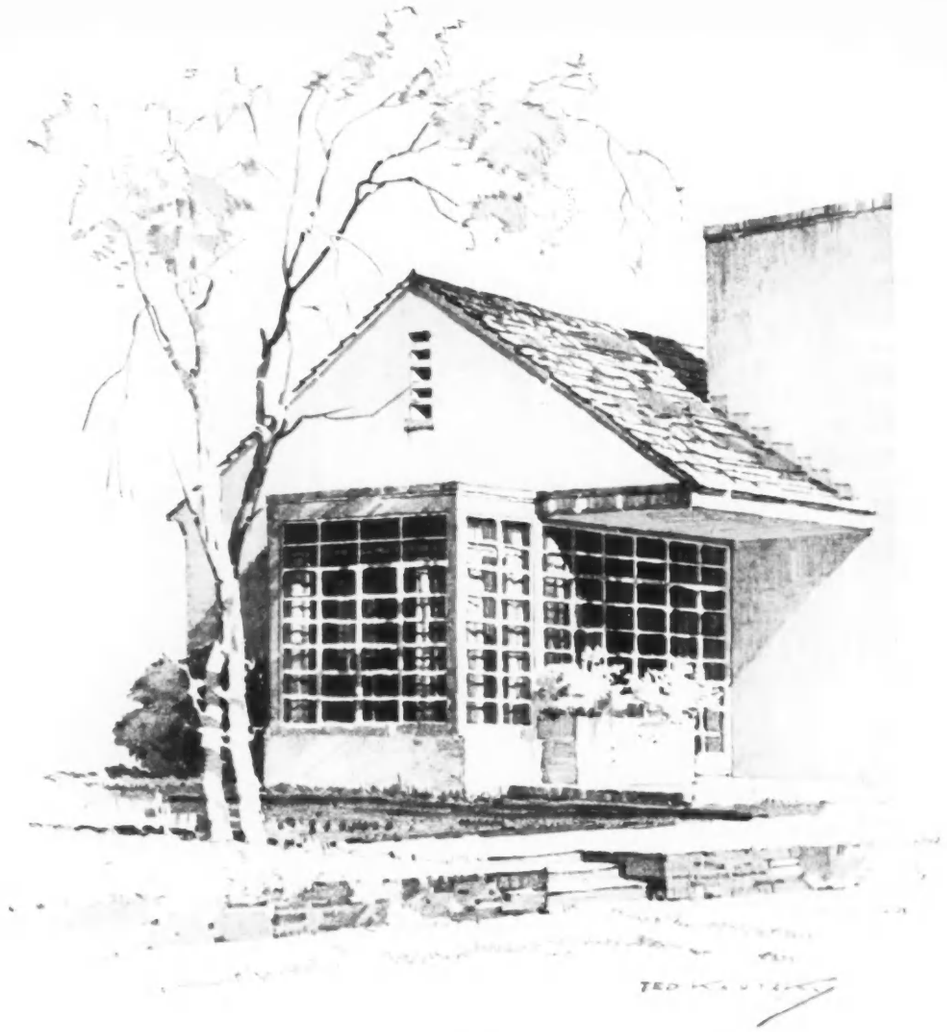

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BEHIND THE RECORD

FOR EDITORIAL ACHIEVEMENT
1941
First Award to
Architectural Record
for the best illustrative treatment of editorial material published during the year ending July 31, 1941
in the fourth annual competition conducted by
INDUSTRIAL MARKETING

RECORD AWARD

Just a year ago this department chronicled an award for "editorial excellence" for the RECORD'S presentation of the Bankers Life Building of Des Moines, Iowa (AR 6/40). And this year we again point with pride! Illustrated herewith is the swanky plaque presented to the RECORD as first prize in *Industrial Marketing's* annual competition for "excellence in editorial achievement." The subject of the award—chosen from entries by 297 publications—was "American Architecture: 1891-1941" published in the January and February issues as a two-part report of America's progress in building design during the past 50 years.

We've just looked over those two issues again. Of course we're pleased! But the palm really should go to you—America's architects and engineers—whose technical vision and designing ability wrought the 50-year progress that we charted, and brought into existence the remarkable group of buildings that we were privileged to record in our pages.

A plea for accuracy in the use of symbolism from Dr. Alan Gregg, Director of Medical Sciences for the Rockefeller Foundation, came to our desk the other day. From now on we're going to be particularly eagle-eyed when looking at new Hospitals, Post Offices and Stock Exchanges. Dr. Gregg's comment was part of a lecture on Humanism and Science—to this part of which he adds "*Je vous implore!*"

The symbol of Aesculapius, the God of Healing, is a staff with one snake twisting around it. The symbol of Mercury, the God of Gaming, Commerce, and Communications, is the caduceus, a staff with two snakes symmetrically entwined. The United States Public Health Service, the University of Chicago Press, the Medical Corps of the United States Army, innumerable hospitals and not a few medical societies hold doggedly to the decorative but rather misleading emblem of the patron of taking chances, taking profit and carrying tidings elsewhere. Granted that mercury is not without therapeutic indications, nonetheless architects and engravers, Trustees and Congressmen should be implored to confine the use of the caduceus to the adornment of the Stock Exchanges, the Chambers of Commerce and Post Offices and be cured of seeing two snakes where one would better indicate the sober dignity of the Aesculapian tradition.

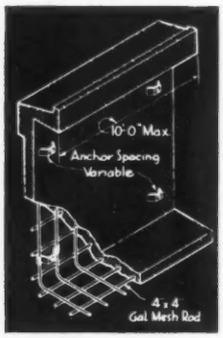
In the RECORD'S presentation of the Coffman Memorial Union at the University of Minnesota, in September, we published the plot plan of the entire Minneapolis campus and called attention to "*all of the buildings indicated in gray*" as having been designed by the Office of C. H. Johnston, Architects and Engineers of the Union. Gray they should have been. But a production error made them black on the printed page—and thus turned our caption precisely opposite to the fact. So, to put us all straight, here's the University campus plan again. The Office of C. H. Johnston of St. Paul designed *all* the buildings shown in *solid black*. The Coffman Union is the large U-shaped structure located at the south end of the campus main axis.

(Continued on page 10)

"You have nervous exhaustion. Now I want you to double the Area of Relaxation of your house."
—Drawn for the RECORD by Alan Dunn

DESIGN ALMOST ANY STRUCTURE

Versatility of thin, precast Architectural Concrete Slabs . . . for Architectural and Engineering Structures . . . for Exteriors and Interiors . . . for New Work and Modernization



Beautiful texture, permanent colors, high strength and large, thin, varied shapes make precast Architectural Concrete Slabs suitable for almost any structure.

1. Beautiful textures and permanent colors result from exposing white or colored aggregates, such as quartz, marble, granite, ceramics or vitreous enamels, in a matrix of Atlas White cement.

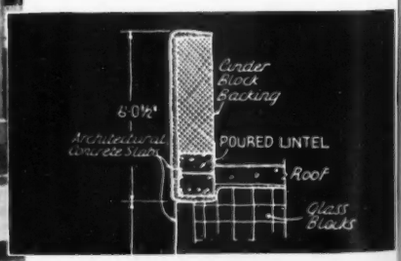
2. Varied shapes and large sizes, 20 feet or more long and up to and exceeding 100 square feet in area, are precast in units 2″ to 2½″ thick.

3. High structural strength over 7,000 p.s.i. in units only 2″ to 2½″ thick is due to factory controlled fabrication, scientific proportioning, vibration, low water-cement ratio, reinforcing with heavy galvanized, welded fabric, and selection of aggregates.

No matter what *your* next job may be, investigate thin, precast Architectural Concrete Slabs. They are available from producers throughout the country. For more complete data, see Sweet's Building File, Section 4/21, or write Universal Atlas Cement Company (United States Steel Corp. Subsidiary), Chrysler Bldg., New York City.

OFFICES: *New York, Chicago, Philadelphia, Boston, Albany, Pittsburgh, Cleveland, Minneapolis, Duluth, St. Louis, Kansas City, Des Moines, Waco, Birmingham.*

OFFICE BUILDING—Ansonia Manufacturing Co., Ansonia, Conn., faced with thin, precast Architectural Concrete Slabs. Use of slab as the exterior and bottom form for the structural lintel is shown in the detail. Note the size of this slab, 14'6" long by 6'1½" high. The company name and the design at top of each fluted column are of black aggregate and were cast into the slabs during fabrication. Architect, Brown and Von Beren; Slabs by the Dextone Co.—both of New Haven.



NAVY PROJECT—The David W. Taylor Model Basin, Carderock, Md., faced with precast slabs made with crushed quartz and Atlas White cement. Slabs 2″ thick and up to 8′ x 10′ in area, served as exterior forms, as shown in cross-section of lintel. Half the slab thickness was considered effective structurally. Designed by Rear Admiral Ben Moreell, Chief, Bureau of Yards and Docks, U. S. Navy; Contractor, Turner Construction Co., N. Y.; Slabs by Dextone Co., New Haven, Conn.

ATLAS WHITE

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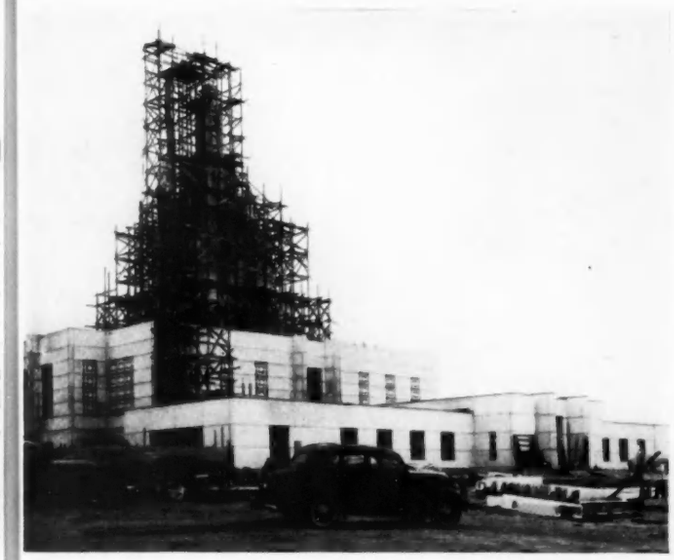
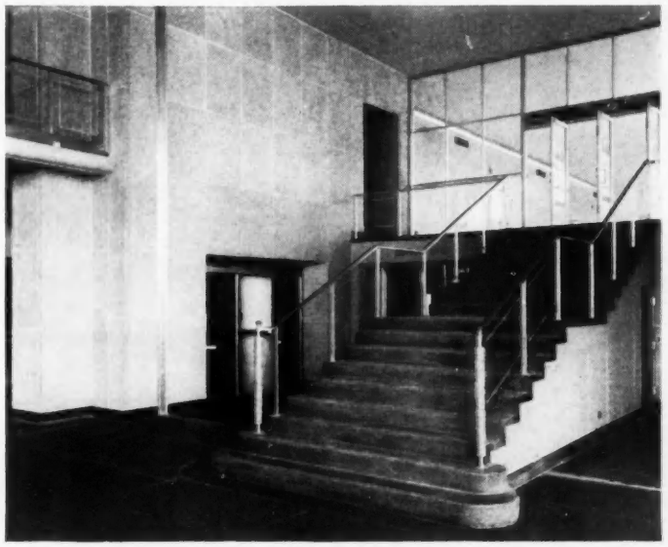
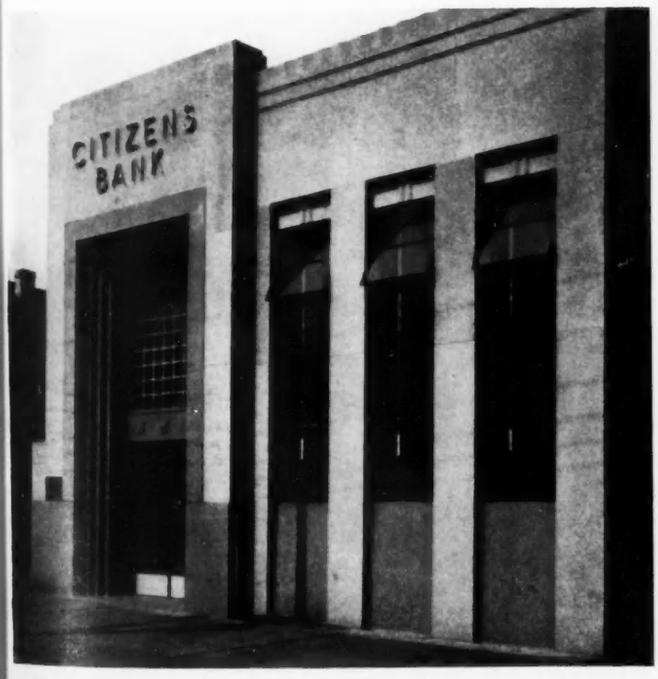


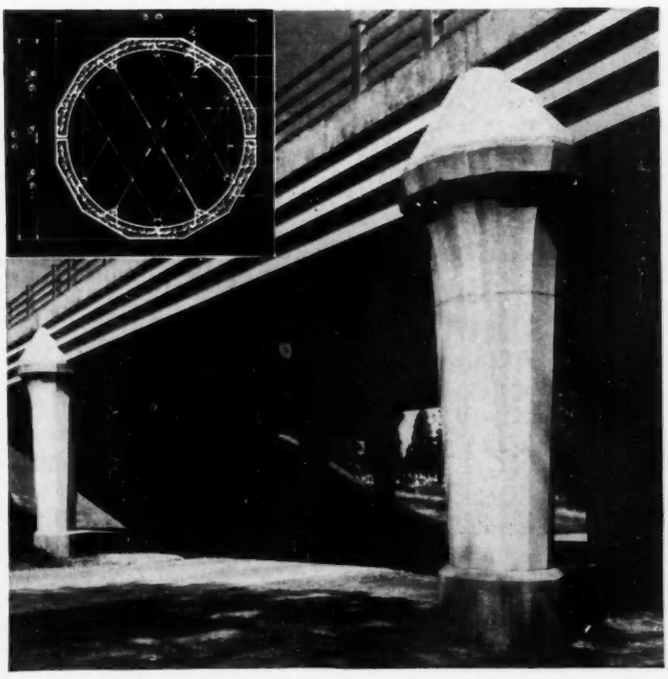
CHURCH BUILDING—Church of the Latter Day Saints, Idaho Falls. 1,000 tons of precast slabs made with crushed onyx and Atlas White cement were used for this tabernacle. These slabs were manufactured in four months while stone masons and quarry workers labored forty years to shape the stones for the Salt Lake Tabernacle. Architect, J. T. Fetzer; Slabs by Otto Buehner & Co.—both of Salt Lake City.



SLABS FOR INTERIORS—Washington National Airport. Attractive texture of exposed aggregates in an almost infinite variety of colors and patterns is a feature of thin, precast slabs. Texture may be pre-inspected. This interior is of buff quartz aggregate embedded in a matrix of Atlas White cement. Architect, H. L. Cheney, Washington; Contractor, John McShain, Inc., Philadelphia; Slabs by Dextone Co., New Haven, Conn.



MODERNIZATION—Citizens Bank, Conover, N. C. Thinness of slabs, normally 2", invites use for modernization, as this frequently eliminates need of ripping off old front to keep within building line. Note that coping is integral with the parapet slab and extends to the window. The large size of the slabs made it possible to use only four units in the entire height of the façade. Architect: Robert L. Clemmer, Hickory, North Carolina; Contractor, Herman-Sipe Co., Conover, N. C.; Slabs by Arnold Stone Co., Greensboro, N. C.



BRIDGE CONSTRUCTION—By-pass on Storm King Highway near West Point. Precast slabs, 2" thick, were used in the columns and architrave. Column slabs were placed and tied together by rods fastened to anchor clips welded to the embedded reinforcing mesh. Structural concrete was then placed inside the column, resulting in "a structure being poured into its own skin or hide." Forms thus were eliminated. Engineer, Dept. of Public Works, Division of Engineering, State of New York; Contractor, Lane Construction Co., Meriden, Conn.; Slabs by Dextone Co., New Haven.

AR-ACS-32

ABS MADE WITH ATLAS WHITE CEMENT

BEHIND THE RECORD

(Continued from page 7)

Harry S. Pack, industrial designer whose article on bus terminals appears on page 83, has a wholesome respect for architects. His interests are concentrated mainly in a definite, though broad field: transportation.

An early interest in aviation led him to a job of selling airline tickets. Later he gained experience in aviation design, worked in the office of Henry Dreyfuss, and a few years ago opened his own office in the Middle West. He flies a Piper coupe, which he designed, to appointments.

His organization's commissions run a transportation gamut: development of institutional styles for plane and bus operators, encompassing everything from timetables to complete aircraft and busses; design of special plane interiors and exteriors; of production-line models; design and styling of power boats. In addition to transportation design, Mr. Pack is responsible for items ranging from lipsticks to stoves.

He sees no reason for conflict between architect and industrial designer; the work of one, he feels, complements the other.

WITH RECORD READERS

HORACE W. PEASLEE

Peaslee Named Head of AIA Group To Co-operate in Civilian Defense

ORGANIZATION of architects for emergency preparation advances with the announcement by AIA President *Richmond H. Shreve* of a nationwide group for civilian protection, to be headed by *Horace W. Peaslee* of Washington, D. C. Seventy-one chapters of the Institute, state associations and other architectural groups will participate in the movement, relating their activities to the Office of Civilian Defense of which New York Mayor *Fiorello H. LaGuardia* is director. Mr. Peaslee is chairman of the Air Raid Protection Committee of the Washington Chapter; his plea for sound working knowledge about bomb shelters appeared on page 20 of the RECORD last month.

Urge AIA Public Relations Program

GROWING ACCEPTANCE of the premise that the architectural profession is in need of a public relations program receives impetus from the *Northwest Architect*, publication of the Minnesota Association of Architects, which comes forward with two proposals: 1. That AIA determine by cross section poll of chapters and state association members the attitude toward a possible national program of paid public relations, analyze work which has been accomplished locally, submit a plan of action to the state associations and chapters, which represent 12,000 architects. 2. That "a national magazine published by the architects, similar to *Hygea Magazine* published by the Doctors, would not only provide an excellent medium but would be supported by reputable manufacturers.

Defense Housing—City Planning

HOW EMERGENCY HOUSING can be guided to fit in with the long-range needs of fast growing cities is the theme of four lecture series, three weeks each, offered by the University of Texas. The first of the series has just been completed in Houston, Dallas, Fort Worth. Practicing architects, city planning engineers, staff members of city, state and federal agencies composed a total enrollment of 324. Local AIA chapters, with Chambers of Commerce, assisted in organizing the courses. The lectures are given by *Hugo Leipziger* of the University's Department of Architecture.

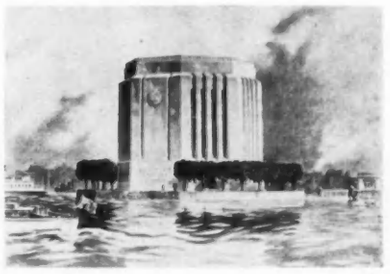
* * *

WELLS I. BENNETT, Dean of the College of Architecture and Design of the University of Michigan, has announced a graduate program in Regional and City Planning for 1941-42, which will be open to qualified men following graduation in Architecture and Landscape Architecture.

Urban Land Institute to Meet

STEPS necessary to clarify city planning aims, and a "new and realistic" approach in city development, are up for discussion at a conference of the Urban Land Institute at Massachusetts Institute of Technology, Cambridge, Mass., Oct. 15-17. On the program will be *Walter S. Schmidt* of Cincinnati, president of the Institute; Dean *Walter R. MacCornack* of the School of Architecture of M.I.T.; *Gordon Whitnall*, city planning consultant, of Los Angeles; *Arthur W. Binns*, chairman of the Committee on Housing and Blighted Areas of the National Association of Real Estate Boards.

(Continued on page 12)



McKIM, MEAD & WHITE, New York architects, were awarded first prize of $2,000 by the New York City Tunnel Authority for their design for the exterior of the Brooklyn-Battery Tunnel ventilation building, to be erected adjacent to Governors Island in the East River. Construction of vertical shafts to connect the building with a two-mile vehicular tunnel will begin in December

ROOFS OVER AMERICA!

Below:
Pratt & Whitney - Division Miles - Bement - Pond, West Hartford, Conn. Architects: Albert Kahn.

America's Largest Single Story Industrial Plant. Wright Aeronautical Corp., Lockland, Ohio, covers 50 acres. Albert Kahn-Associated Architects & Engineers, Inc.

World's Largest Strip Mill, covering 18½ acres.

Above: The Rath Packing Co., Waterloo, Iowa. Bert Tucker, Waterloo – Roofing Contractor.

Industrial Rayon Corp., Painesville, O. Architects: Wilbur Watson & Associates.

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In these days of defense activity, when dependable roof protection assumes a new importance, you can serve your clients advantageously by specifying CAREY Roofs. A nation-wide organization of experienced roofing contractors is at your call. Write for Specification Book. Address Dept. 21.

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ALL SECTIONS EVENLY HEATED

Springfield, O.—Thousands of travelers who pass through the Passenger Station of the Big Four Railroad enjoy the finest modern steam heating as the result of a Webster Heating Modernization Program carried out in the fall of 1939.

Waiting rooms, rest rooms and railroad offices are comfortably heated during the coldest winter weather. A Webster Outdoor Thermostat automatically adjusts the basic rate of steam delivery with every change in the weather. Overheating and underheating are reduced to a minimum.

Passenger Station, Big Four Railroad, Springfield, Ohio

Officials in charge of the heating installation in this modern Passenger Station are well satisfied with the performance of the Webster Moderator System.

An accurate record of heating costs is available because the Big Four Passenger Station uses steam supplied by the Ohio Edison Co.

The cash value of steam savings for the first heating season with the Webster Moderator System amounted to $297.50. The saving was accomplished despite a 20 per cent increase in heating load over the 1938-39 heating season.

The heating modernization program also included installation of 49 Webster Thermostatic Radiator Traps, ten Double Service Valves and four Webster-Nesbitt Unit Heaters.

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STEAM Heats America . . . .

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WARREN WEBSTER & CO., Camden, N. J. Pioneers of Vacuum System of Steam Heating Representatives in 65 U. S. Cities—Est. 1888

WITH RECORD READERS

(Continued from page 10)

Competitions

AMERICAN ACADEMY in Rome, following its policy inaugurated since the start of World War II, next Spring will award competitive cash prizes in the several fine arts. In both architecture and landscape architecture will be offered a first prize of $1,000; second, third, fourth prizes of $100, $50, $25. Competitions are open to unmarried male citizens under 31 years, and applications must be filed with *Roscoe Guernsey*, executive secretary, 101 Park Avenue, New York, by February 1.

* * *

ARCHITECTURAL LEAGUE of New York has available approximately $1,800 for one or more Arnold W. Brunner Scholarships for 1942. All members of the League in good standing are eligible, and "it is hoped that the subjects proposed for study will be in the nature of original and creative work." Applications are to be made by October 15 in the form of a detailed account of the subject to be studied, supported by evidence of its value and of the candidate's qualifications to undertake it.

* * *

OPEN to bona fide registered students of structural engineering and architecture in recognized technical schools of the United States and its possessions, the annual bridge design competition of the American Institute of Steel Construction is announced. Three cash prizes, of $200, $100, $50, are offered, and drawings must be received at the Institute's executive offices, 101 Park Ave., New York City, not later than February 10, 1942. *Edward K. Klingelhofer* is chairman of the Committee on Aesthetic Design of Steel Bridges; full details may be obtained from *F. H. Frankland*, Director of Engineering.

* * *

LITURGICAL ARTS SOCIETY, INC. of New York City has been commissioned by the National Catholic Welfare Conference to conduct a competition for a statue of Christ, to be erected in front of the new headquarters of the National Catholic Welfare Conference, Washington, D. C. The proposed statue, of bronze, will be approximately 15 ft. high and will stand on a 10-ft. stone pedestal. The competition is open to sculptors in the United States. Those wishing to take part are requested to send photographs not larger than 11 by 8 in. of executed work, a letter stating qualifications and at least two letters of recommendations to the secretary of the Liturgical Arts Society, Inc., 300 Madison Avenue, New York City, not later than November 7. Supervising the erection of the statue and building are the *Most Reverend Edward Mooney*, Archbishop of Detroit, *Most Reverend Samuel A. Stritch*, Archbishop of Chicago, and *Most Reverend John F. Noll*, Bishop of Fort Wayne.

* * *

ARC WELDING applications are often news (AR 7/41, p. 22), and for interesting items about such applications prizes of $100, $50, $25, $15 and $10 are distributed each month by Hobart Brothers, Troy, Ohio.

American Designers' Conference

NECESSITY for simplification, due to the defense emergency, brought the American Designers Institute together in its first New York conference October 3 and 4. The current situation, it is felt, will profoundly affect the trend of commercial and industrial design. A need is seen for present planning and foresight if aesthetic results are to prove successful. Keynote speaker was *Dr. James F. Bogardus*, head of the Consumers Durable Goods Section of OPACS.

Exhibition of Ceramic Art

CONTEMPORARY ceramic art of the United States, South America, Canada will be exhibited at the Syracuse (N. Y.) Museum of Fine Arts Oct. 13 to Nov. 12. This showing celebrates the 10th anniversary year of the National Ceramic Exhibition, founded by the Museum to honor *Adelaide Alsop Robineau*, American

(Continued on page 13)

Pride

OF HOME OWNERSHIP

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SOSS INVISIBLE HINGES

YOUR CLIENT WILL APPRECIATE THIS FEATURE

No longer need surfaces be marred by those unsightly, disconcerting gaps and projections whenever a hinge is necessary. SOSS Invisible Hinges are out of sight when the door is closed. Their absence beautifies doors, cupboards, folding partitions, etc., and widens the opportunity for modern, unusual design. Write for full details.

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DETROIT • MICHIGAN

WITH RECORD READERS

(Continued from page 12)

ceramist. The International Business Machines Corporation is a joint sponsor. Settings are the work of *Bill Atkinson*, architect-designer.

Scholarship

FIRST WOMAN to be awarded a postgraduate architectural scholarship by Cooper Union, New York City, is *Ann Sirotenko* of West Orange, N. J.. *J. Andre Fouilhoux*, chairman of the Advisory Council of the Cooper Union Art Schools, announces. This Fall Miss Sirotenko begins a year of advanced study of large-scale construction at Cranbrook Academy, Bloomfield Hills, Mich. Blonde, five feet tall, she was given the $1,000 award in recognition of the excellence of her designs for large buildings, modern interior decoration, plumbing and sewage systems, heating and ventilating units.

New Addresses

C. HARDY OLIVER announces his new address at the First National Bank Building, 1203 W. Washington St., Columbia, S. C. . . . *J. Thomas Camlet*, formerly of Clifton, N. J., is now in offices at 667 Main Ave., Passaic, N. J. . . . Chester M. Wright & Associates, Inc., 1003 K Street N. W., Washington, D. C., announces the affiliation of *Frederick M. Feiker* in the capacity of Engineer-Consultant. . . . Temporary address for *Ollivier J. Vinour*, formerly of Atlanta, is 1422 Johns Rd., Augusta, Ga. . . . *Edgar V. Ullrich* and *Edgar V. Ullrich, Jr.* announce the opening of offices at 7603 Girard St., La Jolla, Calif. . . . *Theodore R. Feinberg* has moved his office to 45 John St., New York. . . . *Arthur E. Rigolo* and *Stanley A. Leeks* are now at 802 Main Ave., Clifton, N. J.

Correction

HARRISON & FOUILHOUX should have been named as designers of the remodeled Bronx Zoo, shown in the article by *Roland A. Wank* in our September issue (p. 78). *Harry Sweeney*, as Superintendent of the Zoo, co-operated.

Specify these

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INSULATED WIRES & CABLES

Approved Types for Every Kind of Service

For General Purpose Wiring:

☑ **HAZACODE, Type R,** can be operated at a copper temperature of 50° C. (122° F.). Safely meets 1940 National Electrical Code requirements for building wire.

For Performance Tested Wiring:

☑ **HAZARD PERFORMANCE, Type RP,** contains not less than 30% new rubber. May be operated at a copper temperature of 60° C. (140° F.).

For Permanence and Heat Resistance:

☑ **HAZARD PERFORMITE, Type RH.** An unusually heat-resisting, super-aging rubber insulation for buildings where an especially high grade of wire is desired. Meets the requirements of Federal Specifications JC-106 and ASTM D-469. May be operated at a conductor temperature of 75° C. (167° F.).

For Wiring in Moist Places:

☑ **HAZARD WATERTITE, Type RW,** exceptionally tough and elastic. Very high dielectric strength and resistance; low specific inductive capacity maintained on long immersion. Approved for use in moist places in buildings instead of lead covered type. For operation at 50° C. (122° F.).

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☑ **HAZARD THIN WALL PERFORMITE, Type RHT,** is the only type of small diameter wire that may be used for both new work and rewiring. Available in sizes 14 to 8 inclusive and in full range of colors. Same conductor temperature as Type RH.

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☑ **HAZAKROME, Type SN,** the smallest diameter building wire; permits high increase in electrical capacity. May be operated at 60° C. (140° F.). It has a synthetic, flameproof insulation with no braid. Only small diameter wire available for power circuits (sizes to 4/0). Comes in a full range of colors.

YOUR REQUEST FOR HELP on any wiring questions you may have or for full information on HAZARD Wires will receive our prompt attention.

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DIVISION OF THE OKONITE COMPANY
Wilkes-Barre, Pa.
Offices in Principal Cities

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GET THAT *much needed* EXTRA FLOOR SPACE WITH A

Q-FLOOR MEZZANINE

TO THOSE OF YOUR CLIENTS who are in urgent need of extra floor space, suggest Q-FLOORS . . . as mezzanines, intermediate or additional floors or in light wells and courts. At amazingly low cost these wasted areas can be put to work. Since Q-FLOORS are shallow and require little head room they can be utilized where other types of floors are impractical.

A Q-Floor job is "QUICK-IN" . . . two men can lay a 32 square foot section in 30 seconds. When first laid, Q-Floors immediately form safe and solid platforms for all other trades. They speed up the entire job.

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And Q-Floors are always electrically alive . . . never can become obsolete, for they provide 100 per cent electrical availability, this year, next year and every year after. Of themselves they form

QUICK-IN

ROBERTSON Q

a series of cellular steel wiring raceways which are easily accessible through a system of headers or cross channels. Every type of wiring, for telephones, lights, (high and low voltage) can be carried through floor cells to any 6-inch square over the entire floor area whenever needed.

Ask Robertson Representatives for suggestions, detailed information and cost estimates.

H. H. ROBERTSON COMPANY
FARMERS BANK BUILDING • PITTSBURGH, PA.

Q-FLOORS
QUICK-CHANGE

Q-PANELS
SPEED DEFENSE BUILDING

North American Aviation, Inc., Dallas Plant, J. Gordon Turnbull, Consulting Engineer, Citizens Bldg., Cleveland, O.

In 105 days this 23-acre plant for North American Aviation, Inc., at Dallas was built and put into production. 1,105,000 square feet of Robertson Q-Panels were used. Besides speed in construction, Q-Panels combine attractive appearance with great strength and durability.

NEWS FROM WASHINGTON

PRIORITIES PLAN TO AID DEFENSE HOUSING

Defense housing priorities . . . New Priorities set-up . . . Modernization in defense areas . . . Pre-planning program . . . Price and rent control—By KENDALL K. HOYT

CLARIFICATION of Federal policy as to priorities on defense housing materials, awaited for many weeks, is now forthcoming in the plan announced by Donald M. Nelson, Director of Priorities, to aid the construction of 200,000 privately financed defense housing units.

Main feature of the plan is to grant priority ratings to entire projects to secure delivery of scarce materials which appear on the Defense Housing Critical List. This eliminates the need for filing a series of individual applications for different materials. Arrangements were previously made for priority assistance to 100,000 publicly financed units.

All ratings are in the "A" class. The highest available to housing will be assigned to defense projects under way on September first and for remodeling and rehabilitation which create living accommodations for defense workers. Construction for rent in defense areas will get a lower rating and construction for sale still lower. Certificates of rating will be extended through field offices of the Priorities Division on recommendation of the Defense Housing Co-ordinator. (See story on page 39.)

To qualify, a private project must be within reasonable commuting distance of places of defense employment; must be suitable for housing of defense workers; and must not exceed $6,000 sales price or $50 per month rental per family unit.

There is little doubt that, as time goes on, it will be tough to get critical materials for other types of housing in a good many areas.

Public utility materials

An A-10 rating has been granted for materials needed in maintenance, repair, and operation of utilities including electric, gas, water and public sanitation. The rating cannot be used for plant expansions but in some cases can be applied to connections for new customers.

In the priorities system in general, red tape is being cut so that applications may be handled within 48 hours. Nelson is consolidating all previous general priorities orders into basic Priorities Regulations. No. 1 and No. 2 are already issued. He is attempting also to reduce the 100-odd priority forms into simpler and fewer forms. Application blanks will be stamped with official okays and returned to the applicants to save the time involved in making out order forms. Nelson has ruled that from now on priorities are mandatory and will be enforced.

Defense reorganization

The forming of the Supplies Priorities and Allocation Board under the chairmanship of Vice-President Wallace represents a victory by the all-outers over the business-as-usual element. It considerably increases the influence of Donald Nelson. The significance of this new super-agency is in the general direction of policies and a shift in its top personalities.

Aside from priorities, housing is affected through readjustment in branches of the Office of Production Management. The Office of Price Administration and Civilian Supply has been split, with the price part independent under Henderson and civilian supply made a division within OPM, though still under Henderson.

The latter division has under its jurisdiction a Lumber and Building Materials Branch and a Plumbing and Heating Branch.

By recent action of Henderson, prices on the upper grades of Douglas fir lumber, one of the most important of all primary construction materials, are reduced an average of $10 per M board feet. The Intercoastal Shipping Priorities Advisory Committee has certified to the Maritime Commission that defense requirements call for large movements of lumber by the intercoastal lines.

Repairs and modernization

Forms and procedures to expedite extension of credit for the repair and remodeling of houses in defense areas have been distributed by the Division of Defense Housing Co-ordination to all Federal Reserve Banks and branches. Local housing committees and Homes Registration Offices co-operating with the Co-ordinator are encouraging remodeling and rehabilitation campaigns.

HOLC is making available the services of its technical staff and fee consultants experienced in the reconditioning of more than 550,000 homes in the past few years. A grant of $100,000 has been approved to pay the fee technicians to help home owners estimate the possibilities for repairs and modernization to make space available for defense workers.

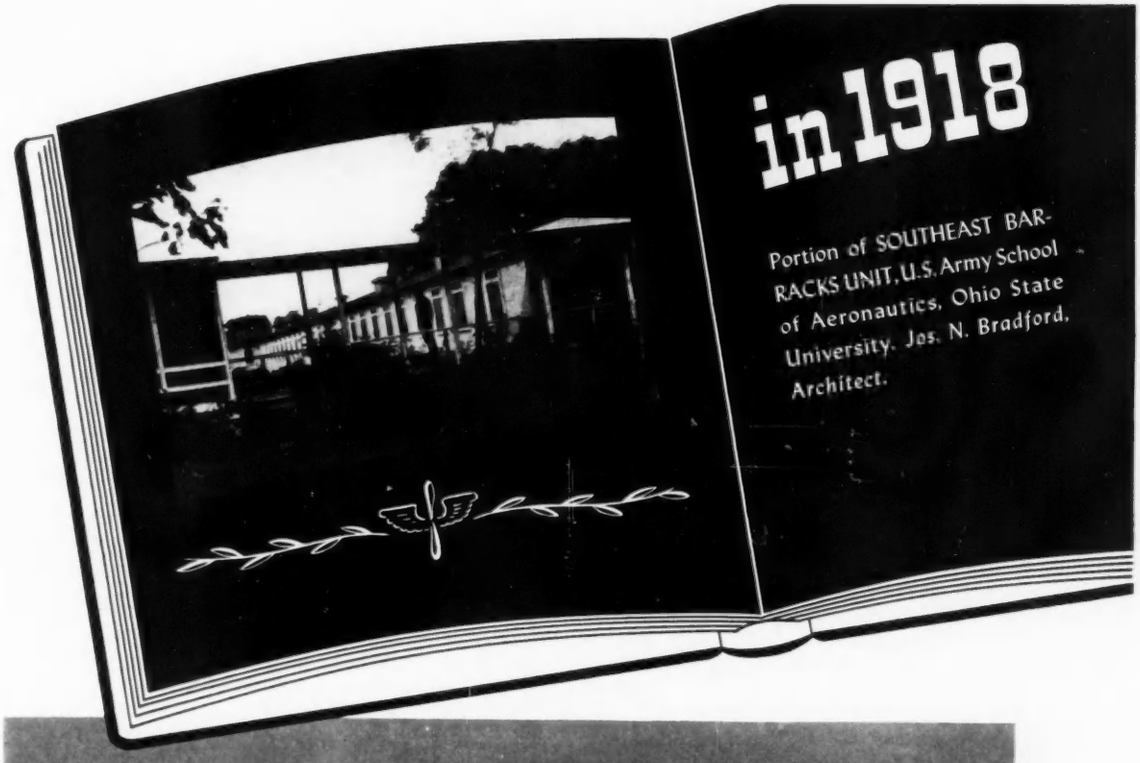
Investigation

Congressman Lanham, author of defense housing laws, has received House approval of a resolution (H. Res. 304) to investigate the progress of the defense housing program, to see whether it is being efficiently, expeditiously and economically conducted and whether more funds are necessary. Lanham is chairman of the House Committee on Public Buildings and Grounds which is to make the study.

Chairman May of the House Military Affairs Committee has introduced a bill to transfer the Army housing program from the Quartermaster Corps to the Corps of Engineers. This measure is backed by the War Department and is the outcome of hearings on the cantonment program before the May committee.

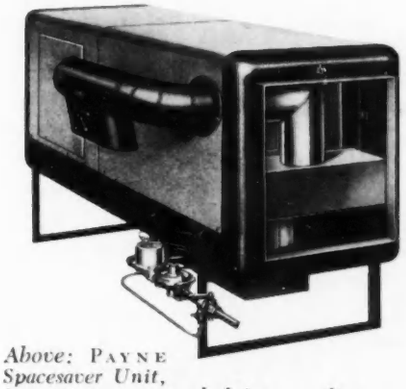
The special Truman investigating committee in the Senate, which earli-

(Continued on page 18)


in 1918
Portion of SOUTHEAST BARRACKS UNIT, U.S. Army School of Aeronautics, Ohio State University. Jos. N. Bradford, Architect.

PAYNEHEAT, TOO, IS A VETERAN OF THE LAST WAR

. . . and during the past year PAYNE has again been honored by the U. S. Government in the selection of modern PAYNE Gas Heating for twenty-nine of the Army's new camps and cantonments throughout the country. ☆ This official recognition, we believe, reflects PAYNE's unswerving concentration upon the one objective of perfecting gas heating. ☆ Today, as America's largest exclusive manufacturer of gas heating equipment, PAYNE has an "army" of loyal architect friends, who because of 100% satisfactory experience, firmly specify PAYNEHEAT. ☆ For details concerning PAYNE's 69 styles and sizes, see Sweet's, Western States AEC, or our convenient AIA file. Or ask your PAYNEHEAT Contractor or Gas Company.



Above: PAYNE *Spacesaver Unit, for attic or suspended from ceiling. Also: Modern Console, Zoneair, Floor Furnace, Duplex Furnace, Gravity Unit, Sentry Forced Air Unit, Industrial Units.*

FOR FURTHER INFORMATION SEE OUR CATALOG IN SWEET'S

PAYNEHEAT

MORE THAN A QUARTER-CENTURY OF GAS SPECIALIZATION

Payne Furnace & Supply Co., Inc., Beverly Hills, California

NEWS FROM WASHINGTON

(Continued from page 16)

er probed into Army housing, recommended a special division of the War Department to handle housing. But the May proposal seems more likely to prevail.

Army "pre-planning"

The Army has funds to employ architects, engineers and other technicians to design and plan military projects which may be needed if the emergency becomes more acute. Contracts for such work are being let with clauses for supervision of construction in case the projects are executed. For example, sites have been chosen and complete plans are being made for an anti-aircraft camp for several thousand troops. By this "pre-planning" program, the Army will be ready to go into action at once if the need arises.

An interesting preview of what architects in the United States may have to plan in wartime will be available from the reports of the American Civil Defense Mission which was in England during July and August. This group consisted of two police officers, two city engineers, a health commissioner and an expert on housing and building. Each member soon will submit a comprehensive report with recommendations.

Among the subjects to be covered are surveys of buildings and structures for wartime inventory purposes, building of shelters in vulnerable areas, and rehousing.

Plant expansion

There will be less new plant expansion and more conversion of existing facilities to defense production, judging from Administration efforts to intensify the program for spreading defense subcontracting. Studies are being made as to the use of plants where operations have been curtailed through lack of materials.

A special Division of Contract Distribution has been set up under Floyd Odlum. It is expected that the amortization section of the tax law will be amended with the dual purpose of simplifying procedure and curbing extravagant new plant construction where existing capacities can be utilized. There have been turndowns of plans for big plants.

Further Congressional hearings have been held on Leon Henderson's price control bill and it is only a question of time before some measure is enacted. Business groups are generally agreed on the necessity for legislation but conservatives feel that Henderson's bill is too arbitrary in giving sweeping powers without definite standards upon which price regulation can be based.

In a recent analysis by the U. S. Chamber of Commerce, it is pointed out that building material prices have risen from an index number of 89.5 in August 1939, to 99.4 on January 4, 1941, and 105.7 on August 30, as compared with a World War figure

(Continued on page 116)

PROGRESS IN PRIORITIES

Priority orders have been running ahead of allocations of raw materials to manufacturers—representing too many claim-checks for an uncertain supply. The new priorities board (SPAB) bids fair to break this particular bottleneck by allocating raw materials to match priority orders for finished goods, as explained by the following excerpts from a recent statement by THOMAS S. HOLDEN, President of the F. W. Dodge Corporation and Editorial Director of ARCHITECTURAL RECORD:

CREATION, by the President's executive order of August 28, of the new Supply Priorities and Allocations Board tends to improve the confused priority situation greatly. . . . Previous to August 28, the Office of Production Management, of which the Priorities Division is a part, was charged with the sole duty of facilitating production and procurement of materials for defense and for lend-lease aid; its machinery for granting priorities and preference ratings and for using them in procurement of strategic materials had far out-stripped the machinery for allocating such materials to primary producers. The situation had reached the stage where real and apparent shortages of critical materials required that much more consideration be given to allocations than had previously been the case. In short, the stage was reached where, for practical purposes, priorities could no longer work without allocations of critical raw materials.

The urgent need for unified priority and allocation procedure has been recognized not only in the organization of the new Supply Priorities and Allocations Board (SPAB) but also in the fact that the Civilian Supply section of the former OPACS organization . . . has become a division of OPM. . . .

The new defense organization not only provides for unity of thought and action in all the economic measures to be taken, but also provides a top policy-making body (SPAB) with authority to resolve differences of opinion and to act immediately on urgent matters. Its official acts to date have all been in the direction of defining authority, clarifying policies and straightening out confused situations. Some disappointment has been expressed in business circles over the fact that there is not larger business representation on SPAB. However, it seems to the writer that the question of personnel is definitely secondary to the fact that responsibility has been defined and authority granted. . . .

None of the recent developments . . . tells a building-product manufacturer what he may expect in the way of supplies of critical raw materials, or indicates to architects, engineers, contractors, builders or investors what the impact of priorities and allocations on private non-defense construction may be. But the prospect of securing promptly vital information and early action on critical matters is definitely encouraging after the confusion that has prevailed. . . .

STOPS "COLD 70°" STOPS FUEL WASTE STOPS UNEVEN HEATING ...And Costs No More!

CONTINUOUSLY CIRCULATED HOT WATER—CONTROLLED BY OUTSIDE WEATHER CONDITIONS—EXACTLY BALANCES HEAT SUPPLY WITH HEAT LOSS.

Hoffman Hot Water Controlled Heat brings to both large and small buildings a control of temperature which in the light of past experience seems miraculous! It is a system of *continuously circulated* water which takes full advantage of the long temperature range through which water can be controlled. No thermostat is needed!

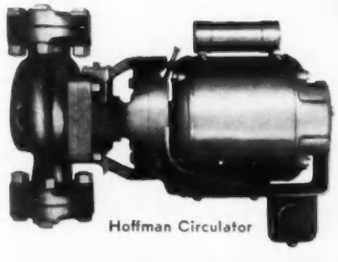
Automatically the system regulates radiator temperatures to the degree which exactly offsets the building heat loss. Radiators always have enough heat to prevent stratification of air and "cold 70°." Positive elimination of overheating ends the waste of fuel which so often occurs from this cause.

When designed for a 240 BTU heat emission rate, Hoffman Hot Water Controlled Heat *shrinks the cost* of all heating plant equipment. Radiators are held to minimum sizes. No pick-up allowance is needed, so boilers and burners can be materially smaller. *Hence the comforts of continuous circulation do not exact a premium price!*

Send today for complete design and installation information. Hoffman Specialty Company, Dept. AR10, Indianapolis, Indiana.

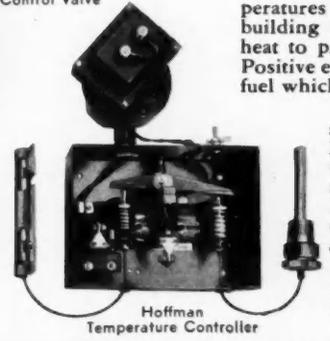
THREE OPERATING UNITS

The Hoffman Circulator *continuously circulates* the water in the system . . . the Hoffman Control Valve admits hot water from the boiler to the circulating stream as often as required . . . and the Hoffman Temperature Controller (actuated by outdoor and circulating water temperatures) opens and closes the Control Valve. Adaptable to any automatically-fired hot water boiler.



Hoffman Circulator

Hoffman Control Valve



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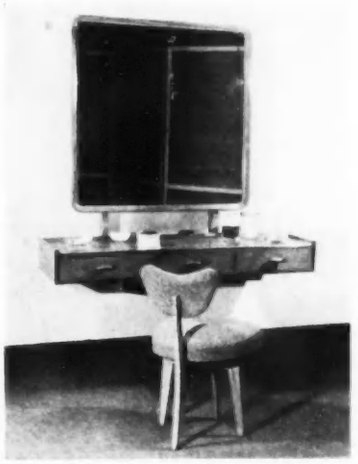
HOFFMAN Hot Water CONTROLLED HEAT

Hoffman Valves, Traps, Pumps and Hot Water Specialties are sold everywhere by leading wholesalers of Heating and Plumbing equipment.

TRENDS IN BRIEF

CHAIR, COFFEE TABLE by Eero Saarinen and Charles O. Eames. Chair embodies new principle: Plywood, moulded to human shape, affords continuous support; with legs, is the frame. 1-inch layer of rubber, covered with Marli Ehrman's prize-winning fabric, provides all-over softness. Weight 1/3 of typical overstuffed piece

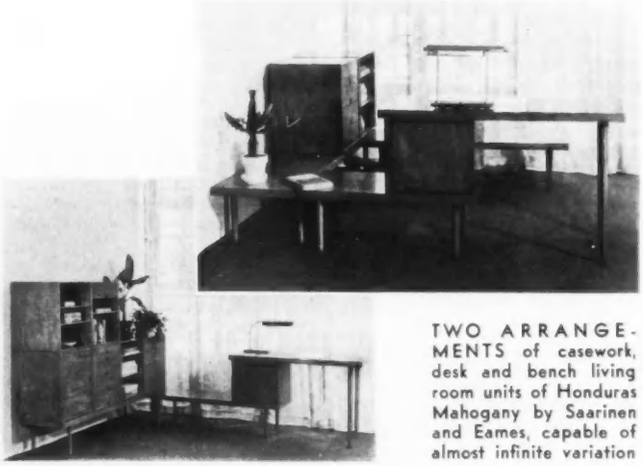


HANGING VANITY AND CHAIR of walnut (above) by Oskar Stonorov and Willo von Moltke. Below, living room-dining room grouping by the same designers. Walnut table, chair with rush back and seat, cupboard units on base. Arrangement of cupboard units is flexible

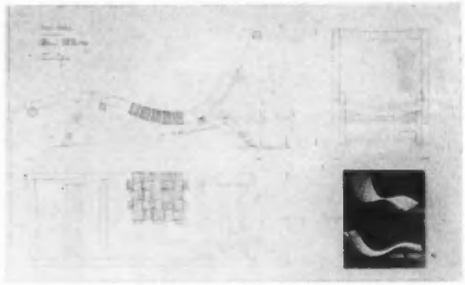
ORGANIC DESIGN

"To FIND new and beautiful solutions for today's living requirements in furniture, fabrics and lighting" was the purpose of two design competitions, one for North American designers, the second for South American designers, conducted by Bloomingdale's, New York department store, in collaboration with eleven stores in other cities* and the Museum of Modern Art, New York. Last month the Museum's exhibition of prize winning designs opened simultaneously with Bloomingdale's showing of furniture and accessories which have been manufactured from those designs, and similar showings in the other cities.

*Co-operating stores: Bloomingdale's, New York; Jordan Marsh & Company, Boston; Marshall Field, Chicago; Halle Brothers, Cleveland; The F. and R. Lazarus Company, Columbus; J. L. Hudson Company, Detroit; Wolf and Dessauer, Fort Wayne; L. S. Ayres & Company, Indianapolis; Parker Brothers, Los Angeles; Kaufman's Department Stores, Pittsburgh; The Famous-Barr Company, St. Louis.



TWO ARRANGEMENTS of casework, desk and bench living room units of Honduras Mahogany by Saarinen and Eames, capable of almost infinite variation



REST CHAIR of Primavera wood with clear wood lacquer finish, woven mecate tape upholstery. Design of Michael Van Beuren, Klaus Grabe, Morley Webb, who compose the firm of Domus of Mexico City

(Trends in Brief continued on page 24)

WHY DR. ERVING WEARS EAR MUFFS . . .

DR. ERVING'S ears are not cold. He just can't bear the constant din in his hospital. Footsteps echo and re-echo in the corridors. There is a steady hubbub in the reception rooms . . . in the wards . . . even in private rooms. Not only Dr. Erving minds this noise—the patients are annoyed by it, too, and their recovery is retarded.

What the hospital architect ought to do is install ceilings of Armstrong's Cushiontone. This new and improved fibrous acoustical material, in tile form, contains 484 perforations to each 12″ x 12″ unit which actually trap noise . . . make any room more quiet. Cushiontone does not absorb dust and dirt—just noise. It is easily cleaned with a vacuum cleaner or a wallpaper cleaner. It can even be repainted (when necessary) without affecting its noise-absorbing efficiency in any degree. Three thicknesses and two convenient unit sizes of Cushiontone are available.

The attractive ivory coloring is an excellent reflector of light—helping to keep illumination costs at a minimum. Cushiontone is also an efficient insulating material—keeping rooms at a more even temperature, summer and winter. Would you like more information? Write for your copy of "Tune out Noise," an informative illustrated booklet describing Armstrong's Acoustical Ceilings in detail. Address Armstrong Cork Co., Building Materials Division, 1245 State Street, Lancaster, Pa.

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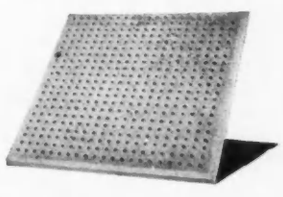
CUSHIONTONE
Made by the makers of Armstrong's Corkoustic



TRENDS IN BRIEF

(Continued from page 22)

THE PAPERS SAY—

RECORD editors have noted a deepening respect, on the part of the press, for the vital role which the architect can increasingly play in a solution of today's problems. We're continually getting editorial comments which are always interesting, sometimes amusing. So, as space permits, we're going to pass on to our readers those which we think are pretty much to the point.

SINCE 1891 the RECORD has carried the torch for the architect of broad perspective, who sees his house, his factory or his church as elements in a community design. The concept is hardly new; it inspired Wren to design St. Paul's to be seen in glimpses, or as dome and spire over roofs. So we applaud the Houston, Texas *Press* for an editorial which the course in defense housing and city planning (p. 10) inspired: "Let all architects and engineers get a thorough grounding in city planning . . . and let the public insist on relating their homes to the city plan. Together the two . . . could effect a living result far beyond that of mechanically following plats and maps laid down in theory."

* * *

Waukegan, Wis. needs a planning commission, according to *The Waukegan Post*, which suggests such a group include an architect of high standing in addition to the Mayor, Presidents of the Park Board, Chamber of Commerce, Board of Realtors.

* * *

London's newest steel skeleton buildings best withstood the blitzkrieg, correspondents recorded, and in confirmation comes a report to AIA by William Orr Ludlow, cited in the Painesville, Ohio *Telegraph*, to the effect that the modern skyscraper is safer than lower modes, because great weight made necessary unusual strength.

* * *

But the Appleton, Wis. *Post-Crescent* startles even us, and gives point to this issue of the RECORD, by relegating the skyscraper to the street car age! "We must make way," proclaims *The Post-Crescent*, "for the fellow who has an auto under his arm and demands a place to put it."

* * *

The Uniontown, Pa. *Standard* says the white-collar culture of the twenties is in disfavor. "The future seems to be going over to the engineers, the chemists, *the architects*, the skilled workmen." Well, last March in our "Architects in Action" section we disposed, or tried to, of the silk-hat architect, and pointed out, "The great effort . . . is not to become something *more* than an architect, but to become more *of* one, by mastering the problems that surround the architectural one."

CITIES TEST A STANDARD LONG-RANGE PLANNING PROGRAM

A PROCEDURE for programming and budgeting municipal public works, already tested in seven American cities, holds significance for public-minded architects and architectural organizations who have interested themselves in city planning, and who are also aware of problems which the cessation of defense activities will bring to the fore. Experience has shown the uneconomical character of hastily projected and inadequately correlated public works activities. Architects have been among the most vociferous in advocating more clearly mapped programs. The plan described in a report* issued by the National Resources Planning Board is working, apparently with success.

Five-year plan

The cities in which demonstration projects were tried and the new planning method adopted were: Winchester, Mass.; Nashville, Tenn.; Kalamazoo, Mich.; Dallas, Texas; Fargo, N. D.; Sacramento, Calif., and Spokane, Wash. Each city, following a standard program set up by the National Resources Planning Board, compiled a list of improvements needed in the community during the next five or six years, in order of preference. Finances and commitments were analyzed to determine the funds which would probably be available or could be provided. The projects were then scheduled over the years in the order of relative desirability and in direct relation to the funds indicated.

The first year of the schedule was recommended as a capital budget for the ensuing year and was given legislative consideration.

At the end of the first year the program was reviewed; projects eliminated, shifted; a year added. The revised list was again scheduled over the full period of the program. Every year the operation is repeated, so that proposed projects are evaluated again and again before they reach the stage of actual undertaking.

The procedure has also been applied with variations to state governments. Through demonstration studies undertaken co-operatively with the Pacific Northwest Regional Planning Commission, long-range public works programs have been developed by the state governments of Idaho, Montana, Oregon, Washington.

Inauguration of long-range planning by 52 cities and 19 states indicates the scope of present interest in the subject. The National Resources Planning Board spurs such advance thinking as part of a program to build a reserve of public works for post-defense use, and with the Federal Works Agency is sponsoring the Public Works Reserve, to provide consultative and other assistance.

The report, which seeks to guide city and state officials, was prepared by *Melvin E. Scheidt*, under the direction of a subcommittee consisting of *Frank W. Herring*, Assistant Director of the National Resources Planning Board; *Otto T. Mallery*, consulting engineer, Philadelphia; *William Stanley Parker*, architect, Boston; *Fred E. Schnepfe*, Executive Assistant to the Commissioner of Public Works. Mr. Scheidt directed the demonstration studies.

* "Long-Range Programming of Municipal Public Works."

UNDERWRITERS' LABS TEST PLASTICS

OF ABOUT 22 types of plastics available for normal and defense needs, each embracing many variants, cellulose acetate, classified as slow-burning, was the basis for comparison in a series of Underwriters' tests.

Group 1 plastics (butyrates, acrylates, polystyrenes and a few others) burn at about same rate as cellulose acetates. Group 2 (caseins, urea-formaldehydes and a few others) burn slower, may not support combustion. Group 3 (cold molded plastics, several vinyl forms and a few others) burn only when flame is applied.

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REVIEWS OF CURRENT LITERATURE

Compiled by ELISABETH COIT, AIA

AMERICAN GUIDE SERIES. Compiled by the Federal Writers' Project. Missouri, 652 pp., $2.75; Wisconsin, 651 pp., $2.75; both published by Duell, Sloane and Pearce, New York. Louisiana, 746 pp., $3.00; Utah, 595 pp., $2.50; both by Hastings House, New York. Michigan, 682 pp., $3.00; Wyoming, 490 pp., $2.75; both by Oxford University Press, New York. All volumes 5¼ by 7 in., illus.: photos, line drawings, maps, etc.

NO ONE has given us, possibly no one writer can give us, a comprehensive story of American architecture. But each volume in the State Guides Series gives a well presented factual statement not only of that state's architectural history but often also information on contemporary architectural achievements. The volumes listed here are the last six state guides which have come to hand.

Ordinarily a compact chapter on the architectural history of the state is accompanied by several pages of rotogravure reproductions and supplemented by illustrations in the chapters on cities, towns and institutions—and Wyoming in this handful is an exception in its own right.

Of great value as a record of American architecture would be the collection of these chapters and illustrations not only from the state guides but also from some of the many local, town and city guides from Key West to San Francisco. True, many local and regional records exist, especially for the Northeastern and Southern states. But even for regions fairly well documented these guides bring out many points. To cite but one: the French Canadian says he uses the bell-cast roof to keep melting snow from breaking his window as it falls. The Missouri guide relates that similar bell-shaped roofs came to that state with the German settlers; possibly the reason was the same. But who would expect to find the same design in the Louisiana cottage here presented which never fears snow? And in how many books on Southern architecture is it pictured? The uniform plan of the series makes for unity in such a reproduction of texts and of photographs often scattered throughout the volume.

For those unfamiliar with the series be it said that its volumes, compiled disinterestedly and impartially with co-operation of leading authorities in each state, form a modernized, simplified, auto-sized Baedeker-Muirhead for most of the places within this country in which we may expect to have business or pleasure for some time to come.

MARRIAGE IS A PRIVATE AFFAIR. By Judith Kelly. New York, Harper, 1941. 359 pp., 5½ by 8 in., $2.50

THE AUTHOR of the 1941-42 Harper Prize Novel thought the novel was about housing, the publisher decided it was about marriage. At all events here are four years of low-cost housing, the projects privately financed and paying five per cent, imagined, designed and managed by a young Boston-ish architect, a member of the "American Society of Architects" and a contributor to ARCHITECTURAL RECORD. Well-studied solutions are presented for securing legislation, handling stockholders, dealing with politicians' obstructionist tools, designing for maximum possible space, light, safety, solidity and charm within the limits imposed by dividend paying, and for tenant selection, with some alternative solutions which may be applied in succeeding projects.

In the great hinterland of the not housing conscious, this vivid, contemporary story may awaken more interest than tons of expert professional journalism; and architects, though well aware that Tom West's energy, versatility, and devotion are an impossible combination, will hope for a sequel about the period of the eighth project.

OLD CHICAGO HOUSES. By John Drury. Chicago, University Press, 1941. 518 pp. 6 by 9 in., illus. $4.00

A COMPANION VOLUME to "Architecture in Old Chicago" by the late Thomas E. Tallmadge, recently published by the same press, this work gives the exterior views of a hundred homes, residences, mansions and houses with brief accounts of who built them and what has been their later fate. The work, frankly concerned with these houses only as they illustrate the history of prominent Chicago citizens, is well organized and brightly written, and a plan directs the student to the various city sections. Relatively few examples antedate the fire and only one—Wright's Robie house of 1908—is later than the turn of the century.

ART TODAY: An Introduction to the Fine and Functional Arts. By Ray Faulkner, Edwin Ziegfeld, and Gerald Hill. New York, Henry Holt, 1941. 358 pp., 6 by 9½ in., illus. $3.00

THE TITLE of this well illustrated and liberally written book by two Columbia and one Minnesota State University professors is justified, and no less so because architecture and its sister arts seem to dominate the work. For not only in the sections on home, community and religion are examples and illustrations mainly architectural; applications to architecture are emphasized also in chapters on design, materials, processes, on art in commerce and industry, and there is a good chapter on architectural construction.

SPANISH BAROQUE ART By Werner Weisbach. New York, Macmillan, (Cambridge University Press), 1941. 65 plus 20 pp., 6½ by 8½ in., illus. $2.25

A SCORE of pages, with as many small but adequate illustrations, record the lecture on architecture which formed the first of these Lon-

(Continued on page 30)

Studs are secured to bottom plate with self-threading screws. Notice that studs (and floor joists) are placed 24 inches o.c. This wide spacing is possible due to the great strength of Stran-Steel—results in savings of material.

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REVIEWS OF CURRENT LITERATURE

(Continued from page 28)

don University lectures given in 1939, the others being on sculpture and painting.

In a few words the author of several papers on the baroque traces the development of styles in Spain, explains some of the contrasts which make Spanish life "perhaps the strangest and most contradictory of any in Europe," and distinguishes between the baroque of the two countries which saw its highest development: Spain and Germany.

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CURRENT PERIODICAL LITERATURE

SELECTED PROCEEDINGS OF ANNUAL MEETINGS [of the] NATIONAL ASSOCIATION OF HOUSING OFFICIALS: 1941. Chicago, 1941. 162 pp.

RECENT REPORTS of NAHO deliberations constitute informal supplements to the Association's record of experience in "Managing Low-Rent Housing," published in 1938 (289 pp., $2.00), and, with that publication, from the best source this recorder knows as to the workability—or the reverse—of the low-rental housing architects' design.

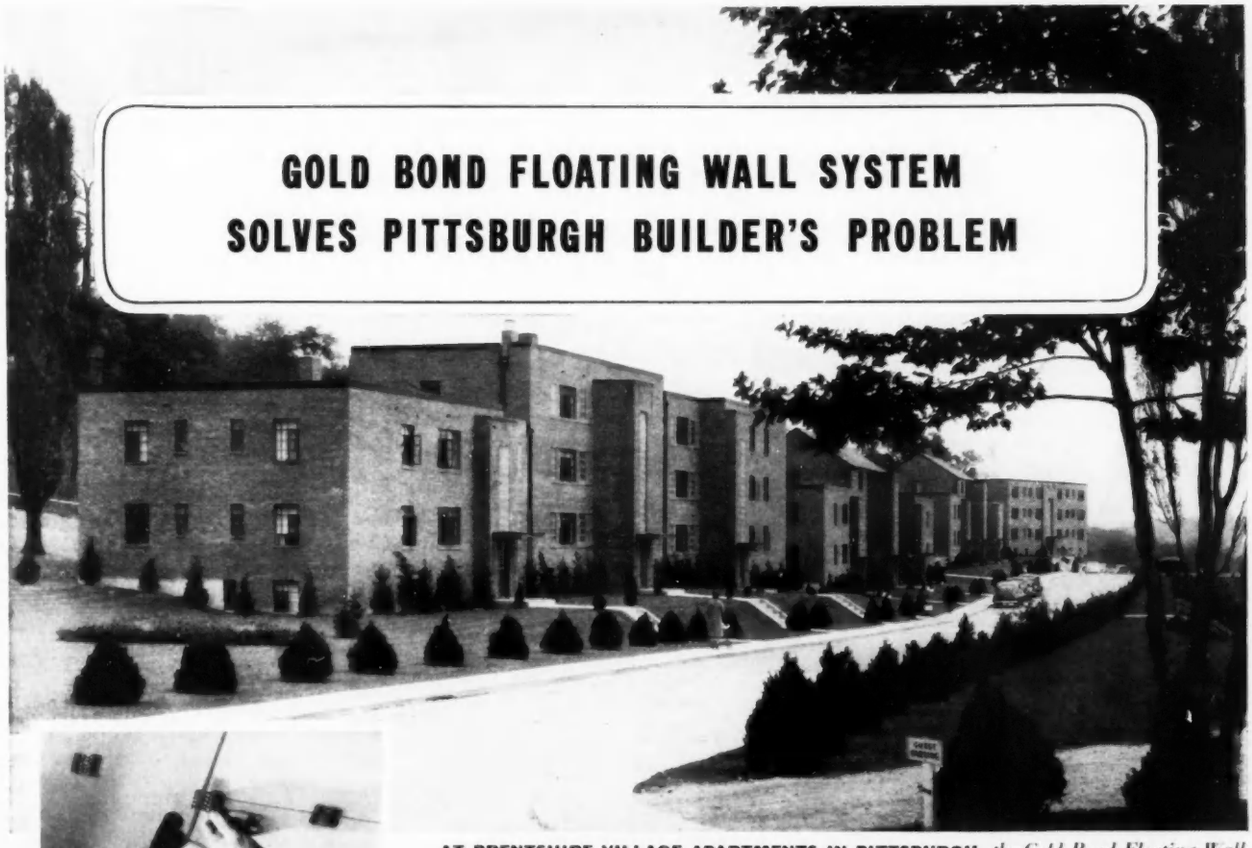
Managers interpret for us the tenants' reaction, and record experience in use regarding the design, construction and materials architects prescribe. The conferences have brought out also some arresting expressions from people prominent locally or nationally, such as the estimate by a NYCHA representative last year that 40 per cent of the architects concerned have "proved capable of coping with the [housing] situation," an estimate possibly more severe than that of a USHA representative "unable to concur with [that] percentage estimate," and, in this year's report a statement from a leading expert who "would rather play in the junk-ridden vacant lots than in the restricted, ill-planned, ill-equipped spaces in the project. . . ."

ARCHITECTURAL REVIEW. Cheam, England, July, 1941. 44 pp.

A SPECIAL NUMBER devoted to consideration of rebuilding England after the war. Everything points to the need of a central planning authority. Great devastation often affords little opportunity for radical replanning unless many sound undesirable buildings can be sacrificed. Then, too, air raid scenery is one of today's heritages, and the "intensely evocative atmosphere" common to all ruins must be recognized. Reminders of what happened "last time" are numerous: among them the narrow city plan which eventuated in spite of Wren's post-fire plans, the paltry £40,000 purchase which spoiled Manchester's Civic Centre plan, and the ghastly rash of domestic and industrial building with which the prosperous Twenties repaired the shortage caused by the last war.

(Continued on page 32)

GOLD BOND FLOATING WALL SYSTEM SOLVES PITTSBURGH BUILDER'S PROBLEM



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REVIEWS OF CURRENT LITERATURE

(Continued from page 30)

RADIANT HEAT BY CONVECTION. By Richard Brindley and Alvin Ottum. Heating and Ventilating, New York, July, 1941, pp. 41-3, photo., diagrams

IN CONTRAST to the usual practice of embedding pipes in floor, wall, or ceiling, this system runs copper tubing with aluminum fins through the interior walls, notched in the studs at baseboard level, from which warm air rises through the inter-stud spaces. The warm air enters the room by a slot 2 in. wide and 2 in. from the ceiling, running all around the room. It is drawn across the ceiling, then through the portion of the slot in the outer walls, thence down the air space between studs in the outer walls to a plenum chamber formed by the space between floor joists (furred down for circulation), and thence back to the heating element. Grilles in the window sills draw cool air into the wall space where it becomes a part of the general heating cycle.

SAFE WAR-TIME CONSTRUCTION. By Ove N. Arup. Architect and Building News, London, June 27-July 18, 1941

FOUR PAPERS on a scheme for inexpensive war-time shelter adaptable to low-rental housing after the war. Essentially the construction is a series of boxes or units laid side by side or one over another as site and locality demand: in a city they may form a five-story building, in suburbs perhaps the two-story "terrace" which is frequently used.

The architect (C. Sjostrum, ARIBA) has designed units to be built in one of two degrees of reinforcement according to the amount of air-raid protection required. Floors, inside walls and roofs are of reinforced monolithic concrete, the outside walls of reinforced brick easily replaced where desired by large windows, glass blocks, etc. The rooms, for which 13 ft. 9 in. by 14 ft. is a frequent area, can take three tiers of bunks for air-raid shelter; and arrangement with a wide corridor would permit of inexpensive modifications to convert them into hostels or canteen buildings or small flats.

TASK. Cambridge, Mass., No. 1, Summer, 1941. 50 cents; $2.00 a year

"THIS MAGAZINE is to be the expression of students [of Harvard, M.I.T., and Smith architectural schools] who realize that architects today are either unaware of the rapidly changing needs of society or are unable to answer them . . . ," a group concerned, among other things, with a "nation ill-housed in the midst of tremendous technical and professional potentialities." In addition to papers by students there are contributions by two architects, Gropius and Moholy-Nagy, and by Robert L. Davison, who is research director of the J. B. Pierce Foundation.

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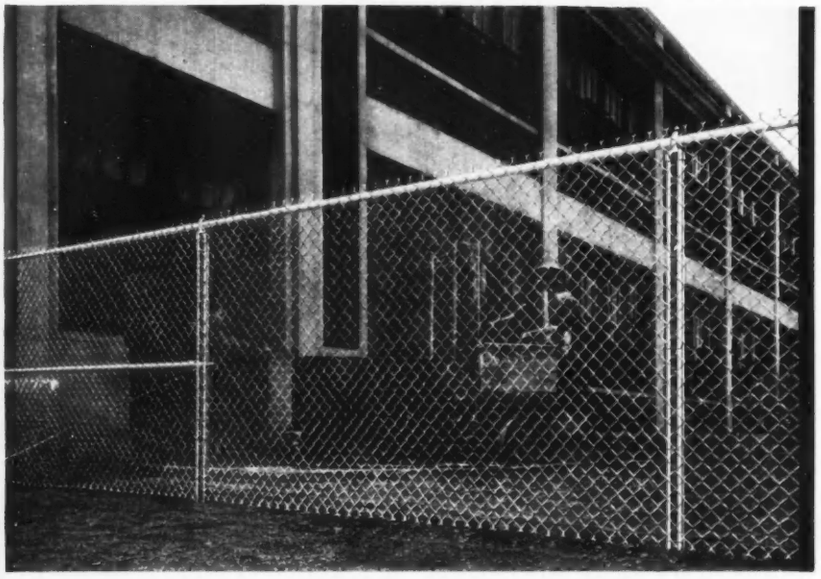

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PRIORITIES TO SPUR HOUSE BUILDING

VITAL TO ALL RESIDENTIAL BUILDING is the new priorities plan just announced in Washington. It gives a clear go-ahead signal to privately financed defense housing, and should release a considerable volume of such building. And by doing that it should at least clear up some uncertainties affecting other types of building. The announcement includes instructions for obtaining preference ratings for private projects through local FHA offices, and a Defense Housing Critical List of materials and equipment for which priority aid will be given.

TO EXPEDITE privately financed defense housing is the purpose of a broad plan recently announced to grant priority assistance to housing projects. The long-promised announcement does much to clear up confusion as to priorities and defense housing. While it offers no direct help to non-defense building, this action on private defense housing should do much to remove the many uncertainties that in some respects have been worse than any actual shortages of materials.

Accompanying the official announcement, by Donald M. Nelson, Director of Priorities, is the Defense Housing Critical List (see Page 118), a comprehensive list of materials and equipment in the procurement of which priorities aid will be given to defense housing projects. Of itself the list is important news, for a great deal of residential construction, defense and non-defense both, has been held up by uncertainties as to what materials would or would not be made available.

Defense areas increasing

There is also a newly enlarged list of designated defense housing areas, now including 275 communities. This list represents an interesting commentary on the extent of the need for residential construction, and on the rapid spread of the defense effort throughout the country.

Under the new procedure, worked out by OPM officials in collaboration with Charles F. Palmer, Defense Housing Co-ordinator, project preference ratings will be granted to "assure priority aid for 200,000 privately financed homes for defense workers." Other arrangements, continues the statement, have already been made for granting priority assistance to 100,000 publicly financed units.

Full speed ahead

The numbers of units quoted are not to be taken as necessarily indicating a curtailment of the defense housing program, which earlier was announced as contemplating almost twice that number of units for the current fiscal year. The total of 300,000 is more properly regarded as the extent of commitments as to priorities and allocations of materials for an indefinite test period. No time schedule is given. The purpose of the plan is to expedite defense housing, not curtail it. In view of enormous plant expansions, the need for housing for defense workers is urgent, and the priorities plan is intended primarily to get quick action for at least a portion of the need.

While all defense housing ratings will be in the defense or "A" class, the highest ratings for housing will be assigned to defense projects which were already under construction on September 1, 1941, and for remodeling and rehabilitation which create living accommodations for additional defense workers. Next in the preference rating scheme will come new construction for rent, then new construction for sale. Certificates of rating will be extended in the field by the field offices of the Priorities Division, upon the recommendation of the Defense Housing Co-ordinator.

The project rating certificates will

be self-extending, so that the one order is sufficient for all materials, and extends through all supply channels back to the manufacturers. In the words of the official statement, "the Division of Priorities can assign *one* rating which can be used to secure delivery of scarce building materials (which appear on the Defense Housing Critical List) and which will go into any *one* defense housing project." This procedure eliminates the need for many individual applications for different materials.

The Defense Housing Critical List (Page 118) includes all materials and products for which priorities will be given, in this blanket rating, for defense housing. And quantities will be specified in the rating granted. Consideration may be given, however, to requests for priorities on other items necessary to a specific project, provided they are materials already under priority control. The Critical List is subject to revision as conditions may warrant.

Defense housing defined

To qualify for the priority assistance, construction must be confined to "family units of a value not in excess of $6,000, if for sale, or for which the monthly shelter rental does not exceed $50." Exceptions to the limits set will be permitted only "in special circumstances." Also it must be demonstrated that the homes are designed for defense workers, and are at locations convenient to their employment. Furthermore, that they conform to minimum standards of the Defense Housing Co-ordinator's office, and that they are so designed as to use a minimum of scarce materials.

The forms to be filled out, to obtain a preference rating, are identified as PD-105, the application, and a "documentation sheet," either PD-105a for new construction, or PD-105b for rehabilitation. These are both for privately financed defense housing; for public projects there is another form, P-19a, which is currently being used for priorities ratings. Applications under the new plan should be filed at local FHA offices. Official instructions for obtaining preference ratings follow.

PROCEDURE FOR OBTAINING PREFERENCE RATING FOR PRIVATELY OWNED DEFENSE HOUSING CONSTRUCTION

1. Provision by private enterprise of adequate housing for defense workers is essential to the success of the national defense program.

2. The Office of Production Management has approved the granting of priority ratings to 200,000 housing units, privately financed and qualifying as defense housing.

To expedite the production of needed housing, preference ratings will be graduated, the highest rating will be granted to projects under construction as of September 1, 1941, and to remodeling and rehabilitation. A lower rating will be granted to new construction for rent, and a still lower rating to new construction for sale.

3. To qualify as defense housing, a private project shall be:

(a) located within a reasonable commuting distance from the place or places of defense employment in any of the Defense Housing Critical Areas included in the list of such areas attached hereto;
(b) intended primarily, suitable for, and available to workers engaged or to be engaged in one of the defense activities within the area, and shall include the customary equipment and appurtenances necessary to occupancy, and may include stores and other facilities necessary to community life, not otherwise available;
(c) offered at a sales price or rental within reach of the defense workers for whose occupancy the housing is intended; provided the estimated market price shall not exceed $6,000 per family per family unit if for sale, or the estimated shelter rental shall not exceed $50 per month per family unit, except where extreme circumstances may require that units exceeding these limits be provided.

4. The preference rating granted to a project will apply only to the materials, products and items of equipment included in the Defense Housing Critical List hereto attached, and in such quantities as the Office of Production Management may permit under the order granted.

5. To obtain a preference rating for a defense housing project, as defined under "3" hereof, the user of the materials, products and items of equipment (the builder) may file with the local office of the Federal Housing Administration, an application for a priority order. Copies of this application form may be obtained from such local office or from local home financing institutions. The form shall be executed in quintuplicate. The applicant shall certify thereon:

(a) that the items of material or equipment to be purchased are necessary to the completion of the construction or remodeling or rehabilitation,
(b) that no practical substitute or alternative source of supply is available,
(c) that quantities are not greater nor delivery dates earlier than required,
(d) that the rehabilitation shall create or make habitable increased living accommodations.

The Application must also contain a Certificate signed by the owner of the property, containing

(a) a statement showing the estimated present market price of the property (including land and proposed buildings), or the estimated monthly shelter rental (excluding charge for services such as light, heat, etc.) per dwelling unit under present market conditions;
(b) a statement showing the sale price or monthly shelter rental which he proposes to charge; and
(c) a certification that he will give reasonable preference as to occupancy to defense workers.

One set of drawings and specifications showing design and materials must be submitted with the original Application.

At the end of the Application Form is a form, to be executed by the local office of the Federal Housing Administration.

The statement of the Federal Housing Administrator does not in any way indicate that the property has been or will be approved for insurance under the National Housing Act and is in no way conditioned upon or connected with the filing of any application for such insurance.

A project shall not be considered as qualifying as defense housing unless the Application discloses that the intended work

(a) is defense housing as defined herein, and
(b) complies with such rules and regulations as may be issued from time to time governing priorities and standards for defense housing.

The Application will be reviewed by the Defense Housing Co-ordinator and if approved by him will be submitted to the Priorities Division of the Office of Production Management with a recommendation that the project be assigned a Project Preference Rating. Such rating shall be subject to extension in accordance with safeguards to be defined by the Priorities Division.

The Director of Priorities is making use of the facilities of the FHA as a ready means of immediate assistance. This special service of the FHA is completely divorced from and has no connection with its underwriting activities as a mortgage insurance agency. All applications for preference ratings will be processed without regard to the type of financing used.

The procedure herein set forth shall be subject to such modifications as the Director of Priorities may from time to time deem necessary or appropriate.

DONALD M. NELSON
Director of Priorities,
Office of Production Management.

TRANSPORTATION—

AN EXPANDING FIELD FOR MODERN BUILDING

FOREWORD

Manifold changes in our way of living have taken place during the life of ARCHITECTURAL RECORD, first published 50 years ago. Its pages are a chronicle of the development of architecture created to serve the needs of this momentous half-century. Not least among the developments are the vast changes in methods of transportation over land, water, and in the air. Concurrently the architect's sphere has both altered and enlarged. Whole new categories of specialized types of buildings have been demanded, and professional specialists have arisen to design them. But individual buildings, adequate in themselves, are not enough. To be counted wholly good, they must also serve as integral parts of intelligently planned community patterning and transportation systems. In the following paper I have tried to indicate not only the dynamic effect which transportation developments have had on building design, but some aspects of the more basic problems which increasingly complex transportation facilities pose. In this wider sphere, the architect's training and abilities are both particularly apt and sorely needed.

THE AUTHOR

By

GILMORE D. CLARKE, ASLA

DEAN OF THE COLLEGE OF ARCHITECTURE, CORNELL UNIVERSITY

As Dean of one of our great schools of architecture and as Consulting Landscape Architect for the Westchester County Park Commission, whose advanced theories of proper land planning were some of the first in this country to be translated into adequate, restricted, modern parkways, GILMORE CLARKE is uniquely qualified to discuss the impact of transportation and its attendant needs on all phases of planning. The RECORD is proud to have the benefit of Mr. Clarke's thinking as one of the important features of its 50th Anniversary publishing program.

Fifty years ago, a railroad station, a round house, a livery stable, a barn, and a carriage house would just about have completed the roll call of buildings required to serve the needs of transportation. Since that time, railroad trains have become streamlined, motor traffic has crowded the highway, and airplanes streak the sky. As these developments have taken place, the list of specific buildings needed to serve them has vastly increased—huge union terminals, metropolitan airports, gas stations, bus stations, roadside restaurants, parking garages, drive-in markets and shops, to name but a few. Admirable buildings have appeared in every category. But more often than not, these new buildings have solved a too limited problem.

An efficient service garage, for example, is a useful and welcome structure. But if it brings increased traffic congestion and tends to decrease a town's livability, may it be considered entirely successful? Critics demand that a building do much more than serve its restricted purposes well; in addition it must increase the serviceability of the block, of the neighborhood, and of the entire community.

Indeed, the architect today finds his sphere inextricably interwoven with broad phases of community planning and the appropriate use of land. He and his colleagues in the engineering professions will be commissioned to design the necessary new types of buildings to serve a more integrated over-all plan. And as transportation facilities continue to expand and grow more complete, his appreciation and knowledge of the basic problems will make the individual buildings he designs more useful, more efficient, better integrated—in short, better architecture. His stature will increase from the old-time concept of the "useful artist," who functioned in a closeted sphere, to the skilled technician and planner, a vital element in the nation's welfare.

Today the need for a closer interrelationship of fully suitable types of planning is woefully evident. The errors of the piecemeal planning habits of the past have resulted in some of our current major planning problems.

SINS OF THE FATHERS

For instance, in the field of transportation, the highly perfected automobile as yet is unable to serve us as completely, as comfortably, and as effectively as we should like, because of the inadequacy of the design of the country highway, the city street system, and most of the buildings in which we work and live. This, in some measure, is true because the development of the automobile has been carried out upon a lively competitive basis by great corporations, whereas the highway and the municipal street system were developed methodically and unimaginatively by public agencies, without the impelling stimulus of private competition. But it is also partly due to the architect's (and owner's) too frequent concept of a structure as an independent element rather than as an integral part of a much larger whole.

A typical irony of such lack of co-ordination is the fact that it usually takes as long to reach the center of a large city from its airport as it does to fly 100 or more miles. New York and Washington, however, are two conspicuous exceptions. In each of these cities, the principal airport is connected with the city by means of a parkway, thus affording a pleasant, quick means of transporting the air traveler between him home or office and the airway terminal.

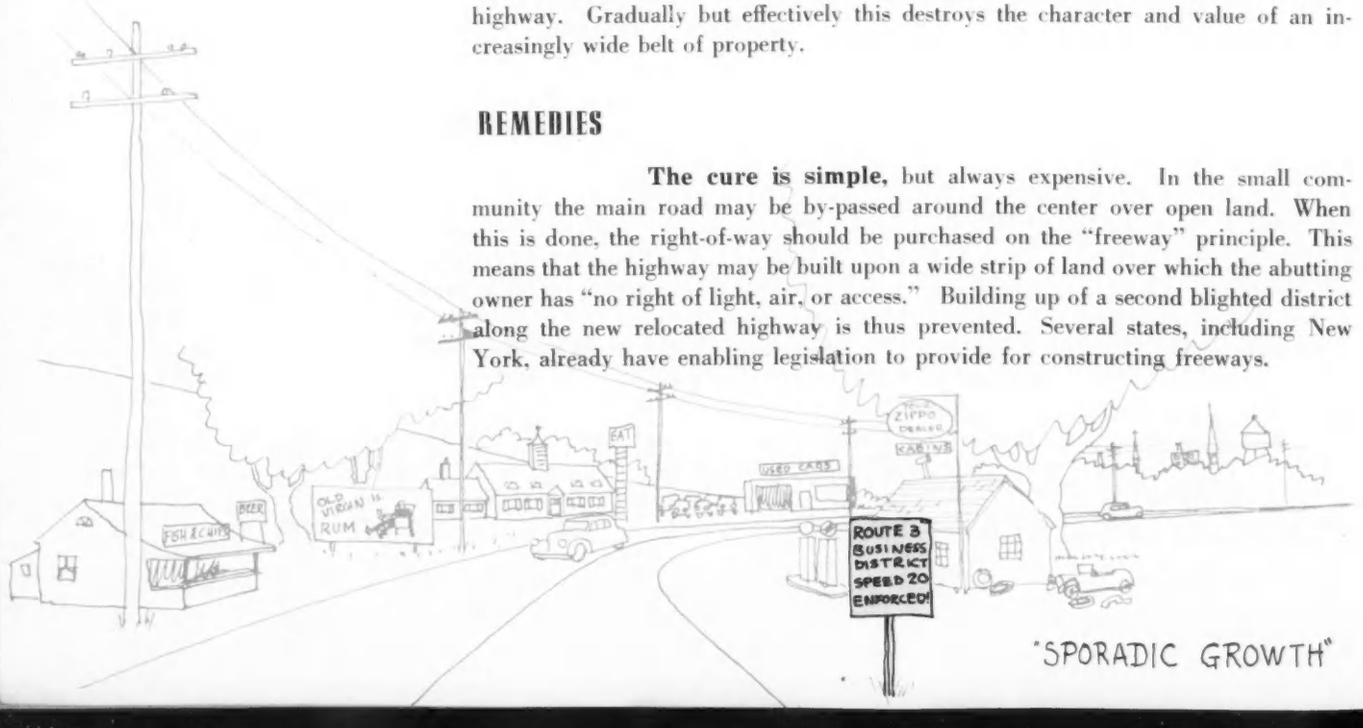
Because of inadequate foresight and lack of correlation on the part of the various planning services—architects included—our automobiles have frequently strangled municipal development, whereas they might actually have liberated us from the congestion we so generously tolerate in cities and in the regions about them.

How much longer are we going to allow the motor car to continue thus indirectly to destroy the character of our cities and villages? As long as we route through traffic over Main Street, we delay the day when our communities may function in a normal, orderly way, when our individual buildings can be designed to key in with the larger scheme of things.

The sporadic growth which normally develops along the main highways that approach and pass through our communities—billboards, sordid looking structures to house eating places, those which serve as backgrounds for dozen upon dozen of gasoline pumps, etc.—result only in depreciating property values and in creating ribbons of blight which eat their way back some distance from the main highway. Gradually but effectively this destroys the character and value of an increasingly wide belt of property.

REMEDIES

The cure is simple, but always expensive. In the small community the main road may be by-passed around the center over open land. When this is done, the right-of-way should be purchased on the "freeway" principle. This means that the highway may be built upon a wide strip of land over which the abutting owner has "no right of light, air, or access." Building up of a second blighted district along the new relocated highway is thus prevented. Several states, including New York, already have enabling legislation to provide for constructing freeways.



"SPORADIC GROWTH"

In the large city, the main artery may have to pass through the center. In Baltimore, for example, preliminary studies have recently been completed for a new north and south artery in the form of a freeway to connect Washington on the south with Philadelphia on the north. As proposed, the artery would be located along one border of the business district that is now occupied for the most part by obsolescent residences, and it would be built over or under all intersecting streets, and elevated or depressed above or below the natural grade. In time, this policy of building main motor arteries on the freeway principle will be found to pay dividends based upon the fact that these freeway lands are forever protected against the deteriorating influences which normally destroy economic values and amenities along our highways.

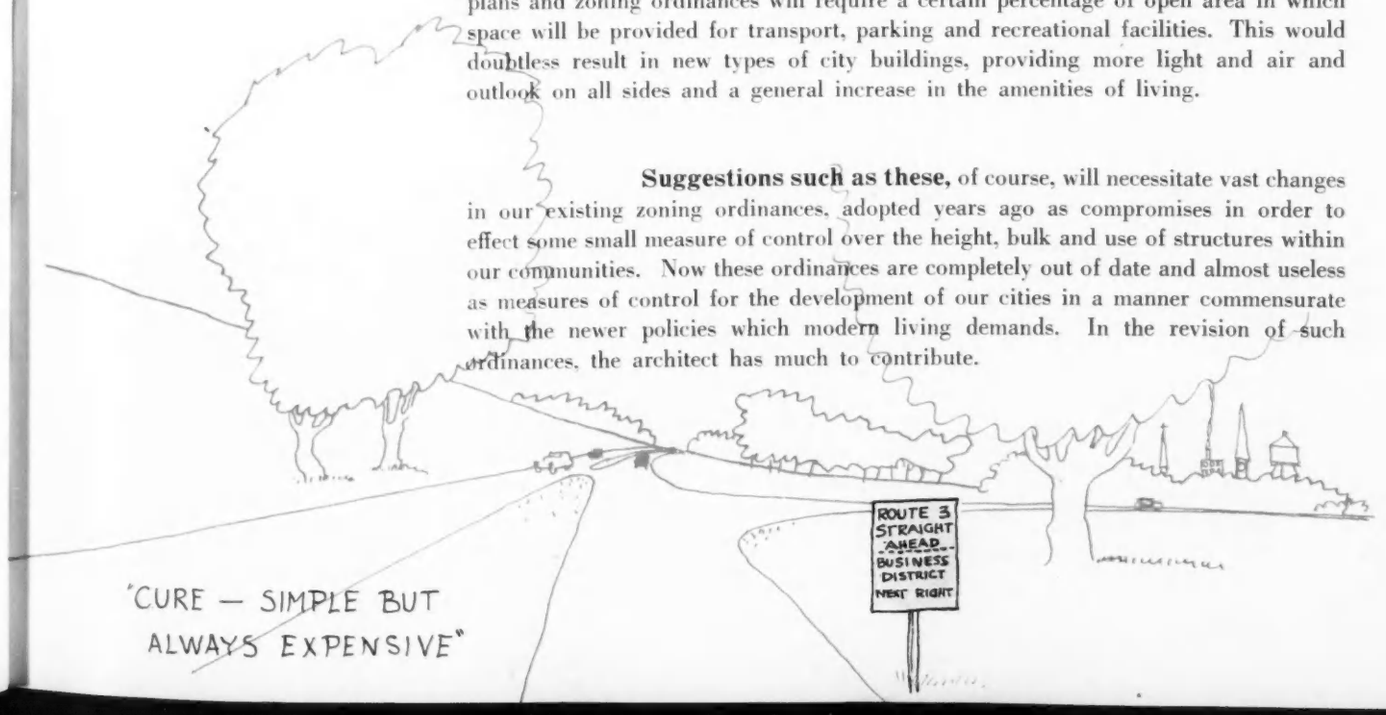
Should these advanced policies with respect to the design of highways become generally adopted, new and sounder types of service buildings for travelers would be sure to follow. In place of the helter skelter of structures that today are strewn like tattered ribbons along our "main stems," an entirely feasible scheme might involve the design of complete service facilities located off the highway and grouped as specialized units at appropriate distances apart. These co-ordinated and planned architectural elements might well include recreational and cultural facilities as well as hotel accommodations and the necessary gas and service stations and restaurants. Complete shopping centers with adequate space for parking cars might also be developed along the borders of freeways, designed in a manner to make them readily accessible via access drives with accompanying grade elimination structures to avoid left-hand turns on the freeway.

RELIEF FOR DOWNTOWN

The auto parking problem is a perplexing one in most cities, and many devices are used to aid in finding a solution. So far, I have never been in a city which has solved the problem. Curb parking eventually will have either to be eliminated or rigidly controlled. Trucks can load and unload inside the factory, the warehouse or the store. Multiple dwellings, offices, loft buildings and factories should be required by law to provide adequate garage space for their needs within each building or in a specially designed structure adjacent thereto. Public garages are needed at frequent intervals for the transient visitor, including the shopper and commuter.

At some future date, it may not be too much to hope that city plans and zoning ordinances will require a certain percentage of open area in which space will be provided for transport, parking and recreational facilities. This would doubtless result in new types of city buildings, providing more light and air and outlook on all sides and a general increase in the amenities of living.

Suggestions such as these, of course, will necessitate vast changes in our existing zoning ordinances, adopted years ago as compromises in order to effect some small measure of control over the height, bulk and use of structures within our communities. Now these ordinances are completely out of date and almost useless as measures of control for the development of our cities in a manner commensurate with the newer policies which modern living demands. In the revision of such ordinances, the architect has much to contribute.



AIRFIELDS AND GREENBELTS

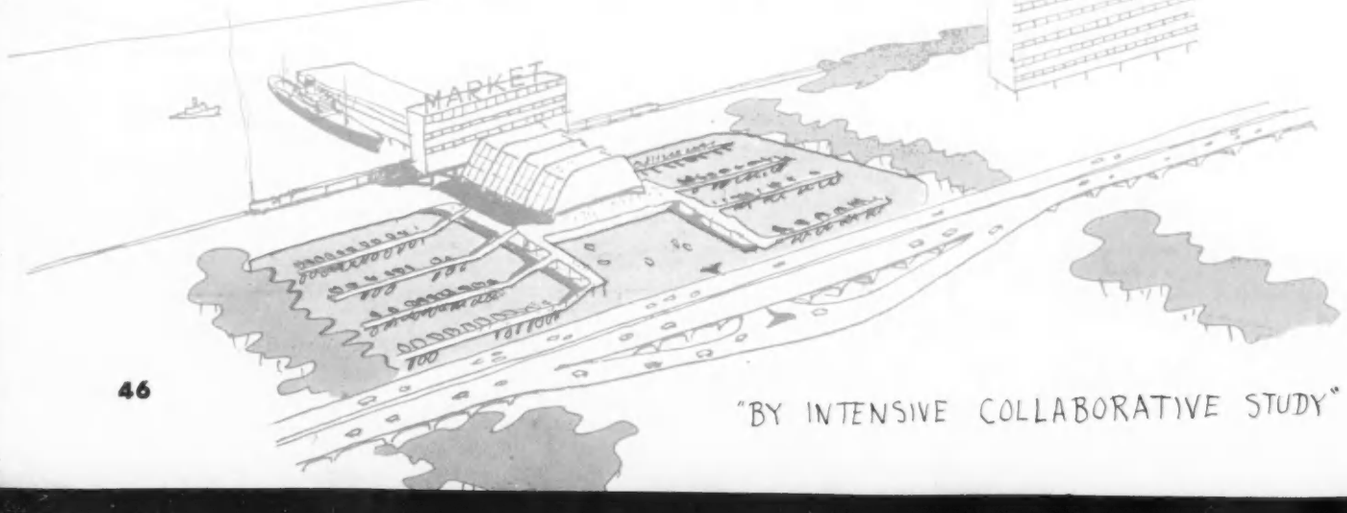
What of the airport? The young men and women of this and following generations will fly airplanes with the same facility as we drive automobiles, and we must provide space for the development of this means of travel. Existing commercial airports in many of our large cities are already taxed to the limit of their capacity, and privately owned planes will be unable to use them. We shall need more fields—smaller ones, no doubt, at points surrounding the outskirts of our cities. Connected by circumferential belt line parkways, with radiating arteries extending from the rim to the center, these fields could be easily reached from any part of the city. It would be well to keep open land around such airports to be used for golf courses or parks, play fields, or farms. This belt of green around the city would provide part of the open spaces that are so badly needed in our congested municipal areas; it should be zoned to be kept open.

"HOW CAN WE RESCUE OUR CITIES?"

We have allowed the several forms of transportation to develop quite independently, and almost entirely without planned methods for co-ordinating them for either passengers or freight. In the great Port of New York, one may still see tremendous barges loaded with freight cars being transported over the harbor waters from terminals in New Jersey to those in Long Island, a slow, tedious and costly procedure which has not changed in fashion in more than half a century. The studied interrelation of all forms of transportation and the development of adequate terminals for the transfer of both goods and passengers is still a challenge to those who visualize the possibility of acquiring greater efficiency in and about our great centers of population. We need more efficient freight terminals to speed the movement of goods, involving interchange between different types of transport. The design of such structures calls for the increasing attention of both architects and engineers, for little thought has thus far been given to these important links in our rather loosely co-ordinated systems of transport. The solutions to problems of this character, involving the design of master terminal warehouse and yards in relation to the city street, the highway and freeway systems, to the railroads and to railroad belt lines, to canal and deep water services, and to airports, will necessitate an intensive, collaborative study by the engineer and the architect.

Drawings by William E. Haible

If we are to rescue our cities from the fate that now seems obvious for them, we must devise new means whereby development becomes more secure, changes less rapid, and obsolescence a less frequent factor. Can this be done? Not by haphazard planning and the continuance of the erection of individual structures that have no regard for their neighbors and environment. But I believe it can be done if architects, engineers, and all others concerned with planning are willing to bend every effort to see that comprehensive planning for land use, street systems, railroads, waterways and airports by the competent and experienced takes the place of the laissez-faire attitude of many of the governing bodies of our communities. Great opportunities lie before us, opportunities not only to increase our specific service as designers of better buildings, but also to contribute toward making our communities safer, quieter, more spacious, more comfortable, and more wholesome.



"BY INTENSIVE COLLABORATIVE STUDY"

LEADERS OF THE TRANSPORTATION INDUSTRY

. . . DISCUSS PLANNING FOR TOMORROW'S NEEDS

Significant Comment Written Especially for this issue of ARCHITECTURAL RECORD

AVIATION

★ DEMANDS OF THE PRESENT war emergency have already fastened a new dependence by the civil as well as the military on aviation. This dependency will not decrease. The necessity engendered in the present crisis will become the habit of future peace. Our national economic tempo is certain to require the movement of passengers, mails and an increasing volume of freight over high-speed, high-frequency express airways between principal cities and across the continent; a network of connecting lines from all secondary cities to feed these aerial arteries; and a further system of rural air services to link villages and hamlets. While our national transport will thus be speeded and the facilities multiplied, our international services will be similarly expanded. So also with facilities to serve the greatly expanded industry of private flying.

To indicate but a few of the structural changes that this trend will require, we shall need adaptation, expansion and improvement of our large air terminals; development of innumerable small but efficient rural airports and construction of specialized utility airports divorced from the busy terminal fields of our transport system. In addition, to serve the increased size and speed of planes which will come into use, new types of fields, terminal buildings and hangars are certain to be needed.

While we cannot accurately envision all of the changes which this enlarged concept of tomorrow's requirements will eventually bring about, we can, through careful study and long-range planning, be prepared for some of them and attempt to avoid the twin pitfalls of costly obsolescence on the one hand, costly inadequacy on the other.

Admittedly the problems involved are complex and difficult; but it is a body of highly competent engineers, architects and designers to whom these problems are addressed.

JUAN T. TRIPPE, *PRESIDENT, Pan American Airways System*

AUTOMOTIVE INDUSTRY

★ ADVANCE IN THE DESIGN of motor cars has been steady. There is no doubt whatever that the automotive industry can and will produce even more efficient cars in the future—faster, more economical, safer and possibly less expensive. But it is important to note that the optimum development of the automobile or other form of motorized transport is in great measure dependent on advance in the facilities which automobiles must use. Unless problems of highways, traffic congestion and parking facilities are solved first, more cars would mean more congestion and discomfort. Faster cars can be produced, but today's highways are no more than able to handle present-day high-speed automobiles. Cars could be made more comfortable than they are today. But streets, shopping centers, parking lots and garages, service stations and theaters (to name only a few) all need to be redesigned so that the motoring public can be as comfortable reaching them, disembarking and entering them as they are while traveling along an open road in the country. The opportunities for architects and engineers in helping to solve these basic problems are both obvious and great. It is not too much a stretch of the imagination to suggest that it eventually will mean virtual rebuilding of our cities—revision of city plans and ordinances, redesigning of many types of buildings. In short, the automotive industry is equipped to produce more and better cars. But if we are to realize their full potential, we must have increasing help from planners, engineers and architects.

ALVAN MACAULEY, *PRESIDENT, Automobile Manufacturers Association*

RAILROADS

★ "STREAMLINING" of the railroads means more than mere streamlining of trains. It is an undertaking that invites the knowledge and initiative of achitects, as well as structural, mechanical, civil and electrical engineers. Many structures and facilities of the railroad plant must be modernized to keep pace with the new tempo in railroading.

Typical of the development challenging the ingenuity of architects and engineers are the following:

- Stations, ticket offices and railroad structures to reflect the efficiency and smartness of modern trains.
- Main line station facilities for speedy fueling and servicing of trains between terminals.
- Terminal facilities for the rapid inspection and efficient maintenance of both freight and passenger trains, with particular attention to such features as air-conditioning equipment, diesel-electric power units, fuel oil service and storage, condensate service and storage for the heating boilers of streamline trains, etc.
- Shop and engine terminal facilities for the maintenance and repair of electrical, internal combustion and mechanical equipment.

The faster freight and passenger train schedules of today have been accomplished in two ways: through higher train speeds and by reducing the time for servicing en route. The ramifications of the latter are practically limitless and offer a worthwhile field of careful engineering study.

While most railroad bridges and structures are designed for use only, architectural treatment is being employed more and more and appearance seems certain to influence future construction.

RALPH BUDD, *PRESIDENT, Burlington Lines*

★ I DO NOT ANTICIPATE there will be any marked tendency toward changes from proven fundamentals in railroad developments during the period just ahead of us, either in the matter of service, design of equipment or structurally. The railroads are going to be too busy using the instruments at hand and proven practices in the handling of traffic incident to the defense program to venture into experimentation to any considerable extent during this period and the reconstruction period which will follow. Moreover, the limitations on supplies and materials available for advancement in the arts of railroading and the field of experimentation necessary therefor would otherwise be controlling. Before the present emergency is over there will have been brought about, due to the establishment of defense industries in the interior and on the Pacific Coast, a considerable decentralization of industry, some more or less hurriedly established without adequate planning, and the future period of reconstruction and planning will be influenced by the necessities for making the most of what we then have. Out of it all the railroads and other transportation agencies will find it necessary to adjust themselves to meet an entirely new peace-time situation, but it is too early to predict the direction that such adjustments will take.

W. M. JEFFERS, *PRESIDENT, Union Pacific Railroad Company*

All photos of the Washington Airport by Orville K. Blake

☆ WASHINGTON NATIONAL AIRPORT

HOWARD LOVEWELL CHENEY, CONSULTING ARCHITECT

ARCHITECTS AND ENGINEERS constantly strive to create perfect structures. When the one perfect building is finally built, ARCHITECTURAL RECORD plans to publish it. Meantime—adhering to a policy begun 50 years ago—the RECORD will continue to report advances that architects and engineers make in the design and construction of buildings wherever they may be found. Usually these advances are made in short steps. But occasionally a structure appears that is not only an important new building in itself but is actually strides ahead of contemporary practice. Such a structure, in the opinion of RECORD editors, is the Terminal Building of the Washington National Airport. Still unsolved (except on paper) is the problem of getting passengers, crews and baggage on and off planes wholly under cover. But a check of only a few of the advanced facilities of the Washington Terminal Building is enough to give the project a five-star rating in anybody's news—a building that sets a new standard for the design of still better airport structures of the future:

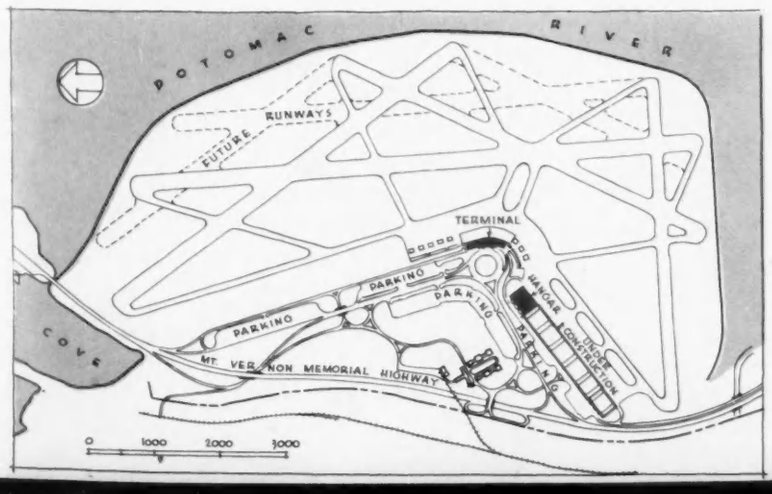
☆ **Complete separation of passenger, sightseer and operational services.**

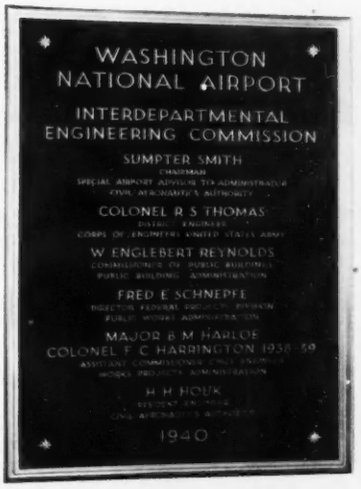
☆ **Continuous passage of persons from places they are to places they would be without crossing other areas.**

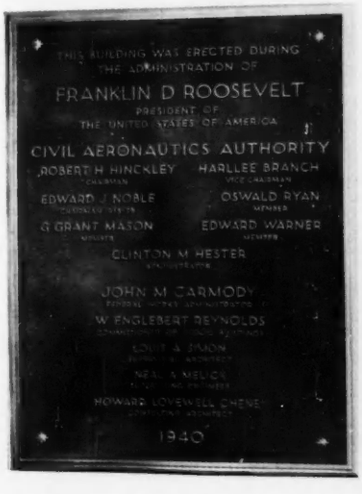
☆ **Handling of baggage, mail, and express channelized for independent, high-speed functioning.**

☆ **A building which both serves its specific function well and dramatizes the visual aspects of air transportation—a highly appropriate dual nature for the air gateway to the nation's capital.**

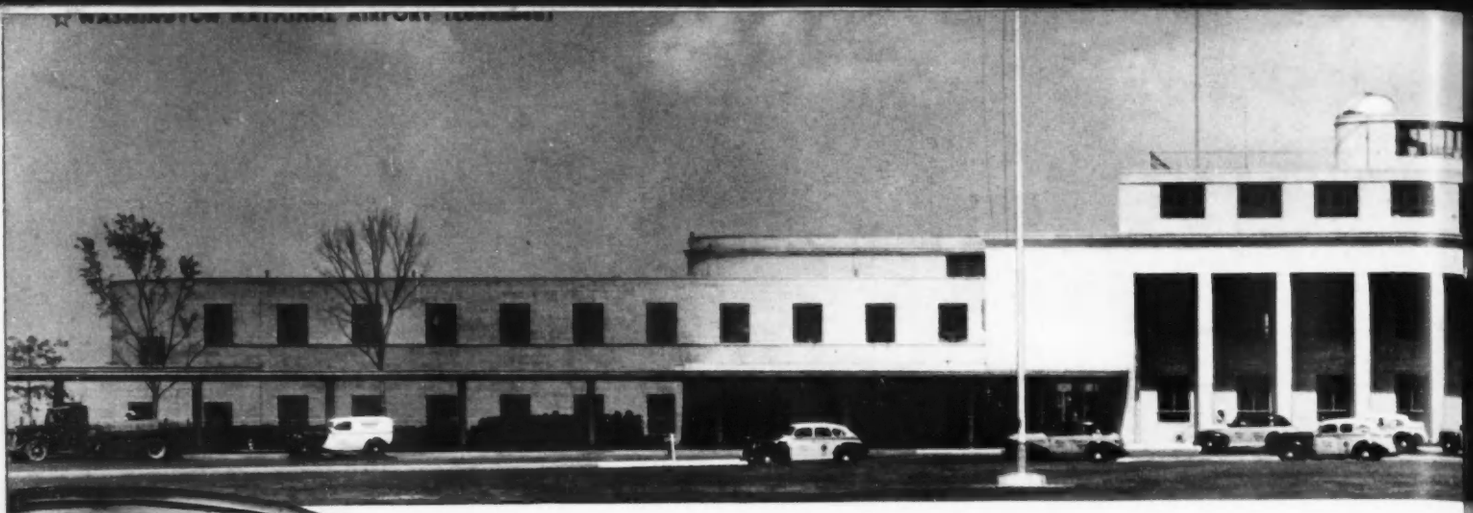
☆ **Extraordinary foresight in providing for expansion with a minimum of rebuilding of field, terminal and other facilities to care for any foreseeable needs.**





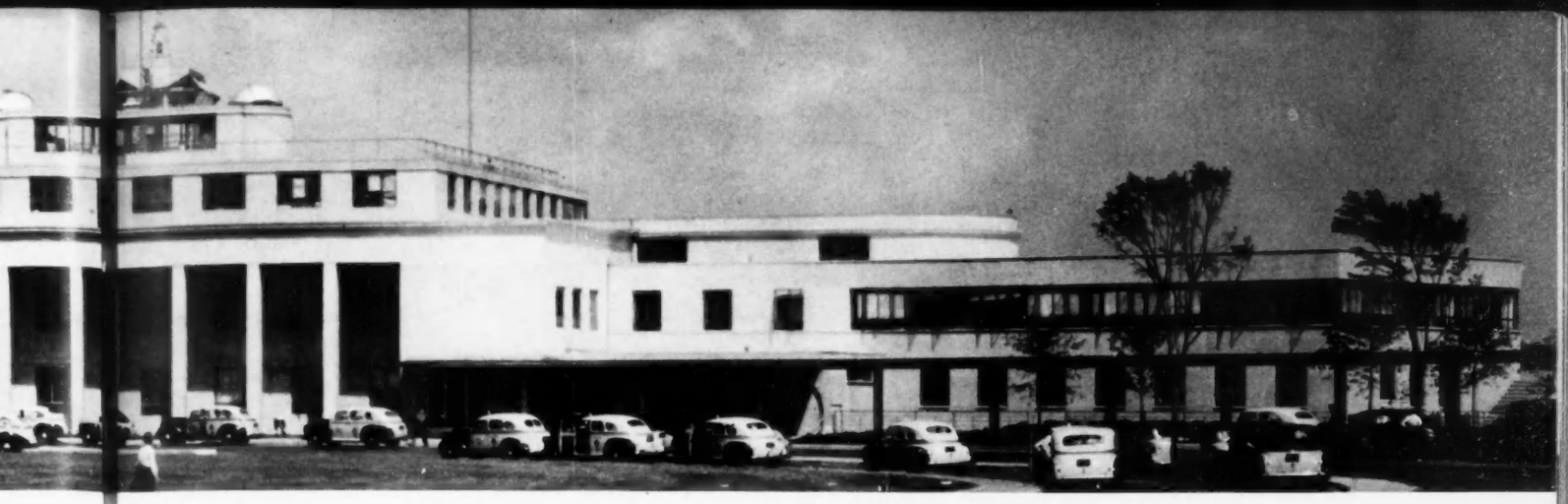


Perhaps no one person is better qualified to report on the structures erected at the Washington National Airport than HOWARD LOVEWELL CHENEY, PBA's Consulting Architect, who was directly responsible for the planning and design of the buildings. We are greatly indebted to Mr. Cheney for his constant and generous assistance in the preparation of the following analysis.



BACKGROUND

THE WASHINGTON NATIONAL AIRPORT, directly in charge of the Civil Aeronautics Authority, is one of the first projects of its kind in which specialists in land use planning have worked closely not only with architects, landscape architects and engineers but with the aeronautical staffs of both the Civil Aeronautics Authority and the private airlines. As our main concern here is with the buildings developed to serve the port, it is not possible to give due credit to all of the individuals involved in the planning of the site, the field itself or the subordinate transportation facilities. The men whose names appear on the two bronze plaques shown on the preceding page, however, deserve special mention. Their work and that of their boards represents a collaborative endeavor of the first magnitude. Nor can we do more than touch on the thinking behind the selection of the Gravelly Point site, recommended by the Civil Aeronautics Authority after years of investigation by various agencies, and approved by President Roosevelt on September 27, 1938. Adjoining the Mount Vernon Memorial Parkway, but 3½ miles from downtown Washington, the site consists of 729 acres, divided into an approximate 556 acres for the landing field and 173 acres for buildings. An area adjacent to the airport is appropriate for future development of a seaplane base (a mandatory requirement). The site affords ample opportunity for future expansion. In this latter connection, it may be noted that the present terminal building facilities may be extended 500 feet to the south and a quarter of a mile to the north with a minimum of construction alteration. The plot plan on the preceding page indicates the plan for extending field runways to handle future needs.



PLAN HIGHLIGHTS

*From airport bus to ticket office to concourse to ground-level field exit is a relatively direct line of travel. And it crosses no other important traffic lane.

*Trucking of baggage, mail and express to and from planes is handled by small power or hand trucks through the ground-level truck concourse toward the field side. Notice that baggage and passenger field exits alternate, so that the two facilities do not conflict.

*The truck driveway at ground level on the west side of the building handles baggage and express to and from the city. An inside dock serves the airport offices.

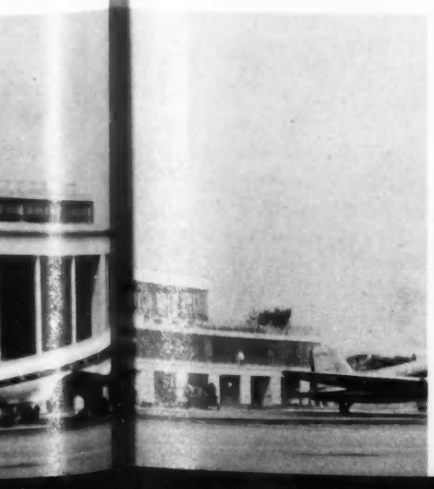
*Trucks bringing mail or restaurant supplies have outside loading docks and turn-arounds at either end of building.

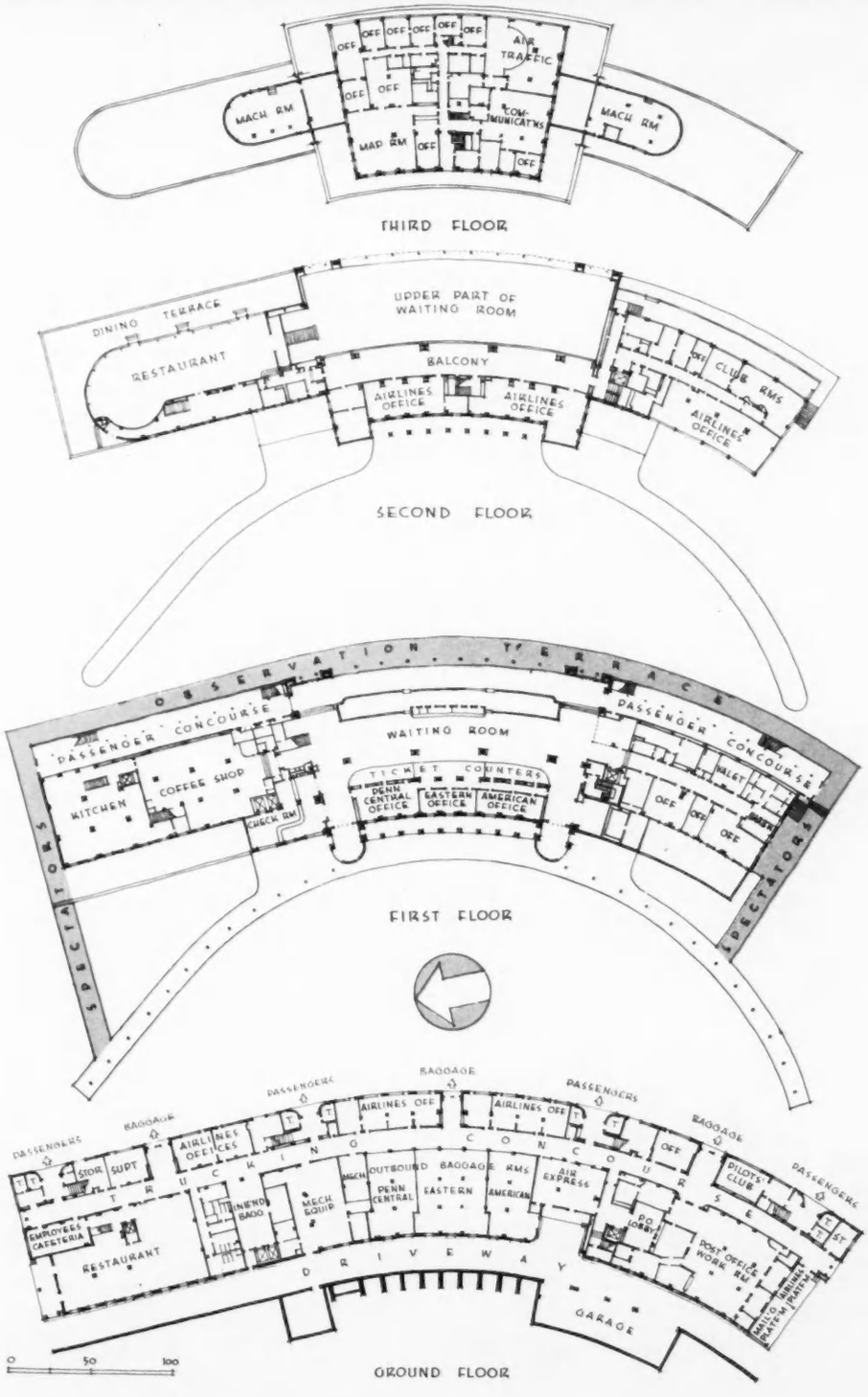
*Outbound baggage brought to the terminal by passengers is chuted down to the ground-floor baggage room from the ticket and weighing counter directly above (see photos, page 54).

*Inbound baggage from planes is wheeled to elevators which carry it up to await passengers' arrival at the check room above.

*Passenger entrances to the field are each equipped with adjacent toilet rooms and telephone booths.

*The visitors' observation deck takes in all the sights without interrupting the main business of the terminal.





A TWO-LEVEL SYSTEM OF CHANNELIZED CONTROL

THE SEPARATE HANDLING of persons and things—and provision of separate facilities for different categories of persons and different types of things—is perhaps the most complex problem connected with the design of an efficient air terminal building. In addition, all of these factors must be centralized around a relatively limited nucleus. While the solution to these problems at the Washington terminal may not be optimum, it represents such a pronounced advance over current practice that it deserves most careful study. Complete separation of passengers and sightseers is possible. And it is handled wholly outside the building itself — so that conflict is avoided before it can begin. Bridge walks at either end of the terminal building lead out to the observation terrace which surrounds three sides of the building. Indicative of the success of this scheme is the fact that in the first three months' operation, more than 800,000 visitors paid to pass through the terrace turnstiles without interfering with the passenger circulation. The integrated facilities provided for passengers are described on pages 54 and 55. For all accessory business of the port — movement of baggage, mail and express to and from planes, servicing of restaurants, trucking of baggage, air mail and air express to and from the city—separate channels (through-building driveway and concourse) and cul de sacs (loading docks, turn-around space, temporary parking) are provided for the purpose at a lower level, as shown both on plans and in the photograph above. All this is so organized that not only do none of these operations conflict with one another, but they are entirely isolated from the movement of either passengers or sightseers. So also with the areas set aside for operating the terminal itself — airlines offices and services for the 900 regular employees at the port. These are located so that their smooth routine never intrudes upon other lines of flow

LIGHT

INDIRECT dome lighting (see detail above) is used in the main waiting room. Flush ceiling units occur in entrance lobbies, public corridors and other public spaces. Fluorescent units are used in continuous flush fixtures over the ticket counter and in the coffee shop. The main restaurant is lighted by both indirect ceiling units and by fluorescent tubing concealed in a cove. The entrance loggia is floodlighted by units concealed in the columns.

SOUND

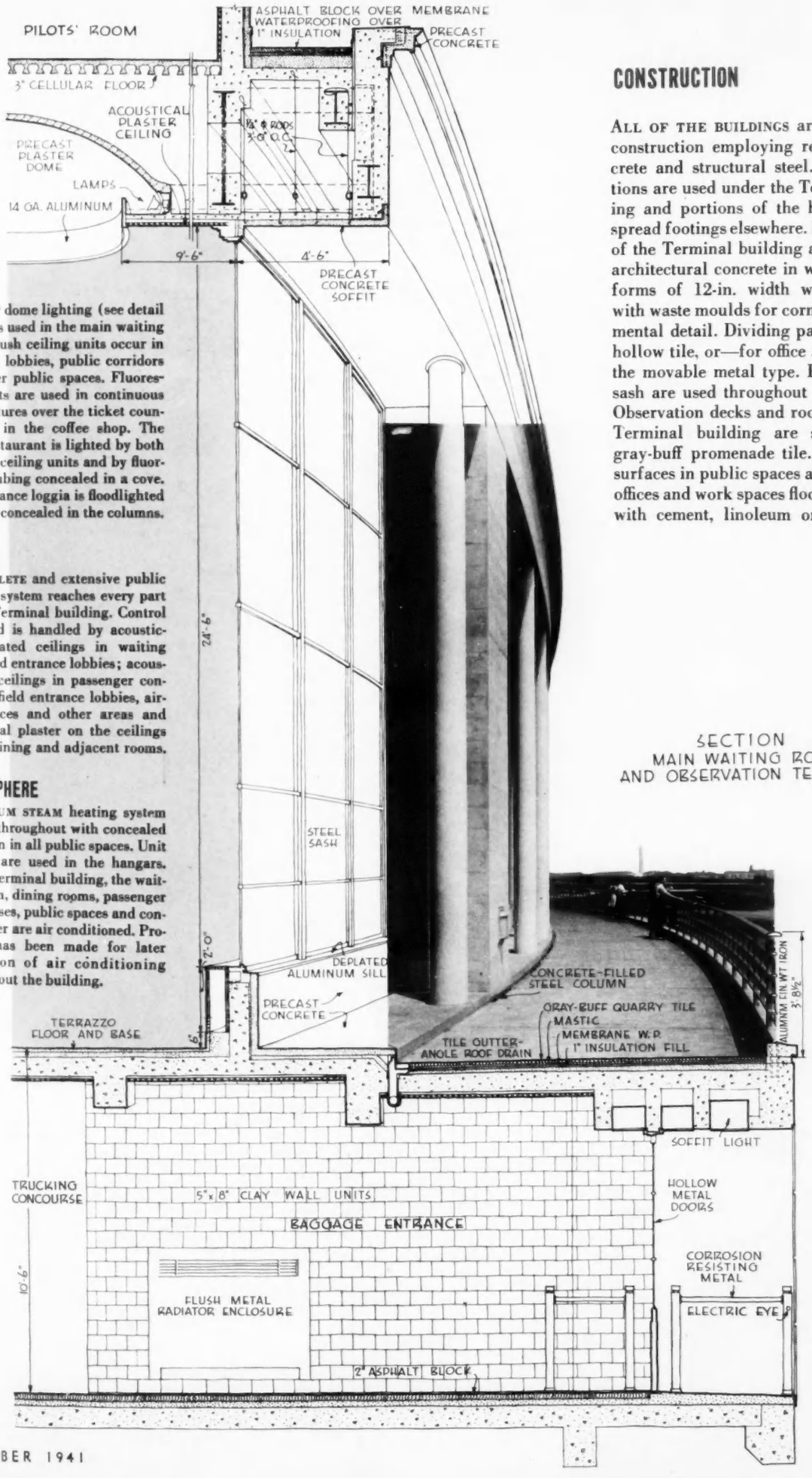
A COMPLETE and extensive public address system reaches every part of the Terminal building. Control of sound is handled by acoustically treated ceilings in waiting room and entrance lobbies; acoustic tile ceilings in passenger concourse, field entrance lobbies, airline offices and other areas and acoustical plaster on the ceilings of the dining and adjacent rooms.

ATMOSPHERE

A VACUUM STEAM heating system is used throughout with concealed radiation in all public spaces. Unit heaters are used in the hangars. In the Terminal building, the waiting room, dining rooms, passenger concourses, public spaces and control tower are air conditioned. Provision has been made for later extension of air conditioning throughout the building.

CONSTRUCTION

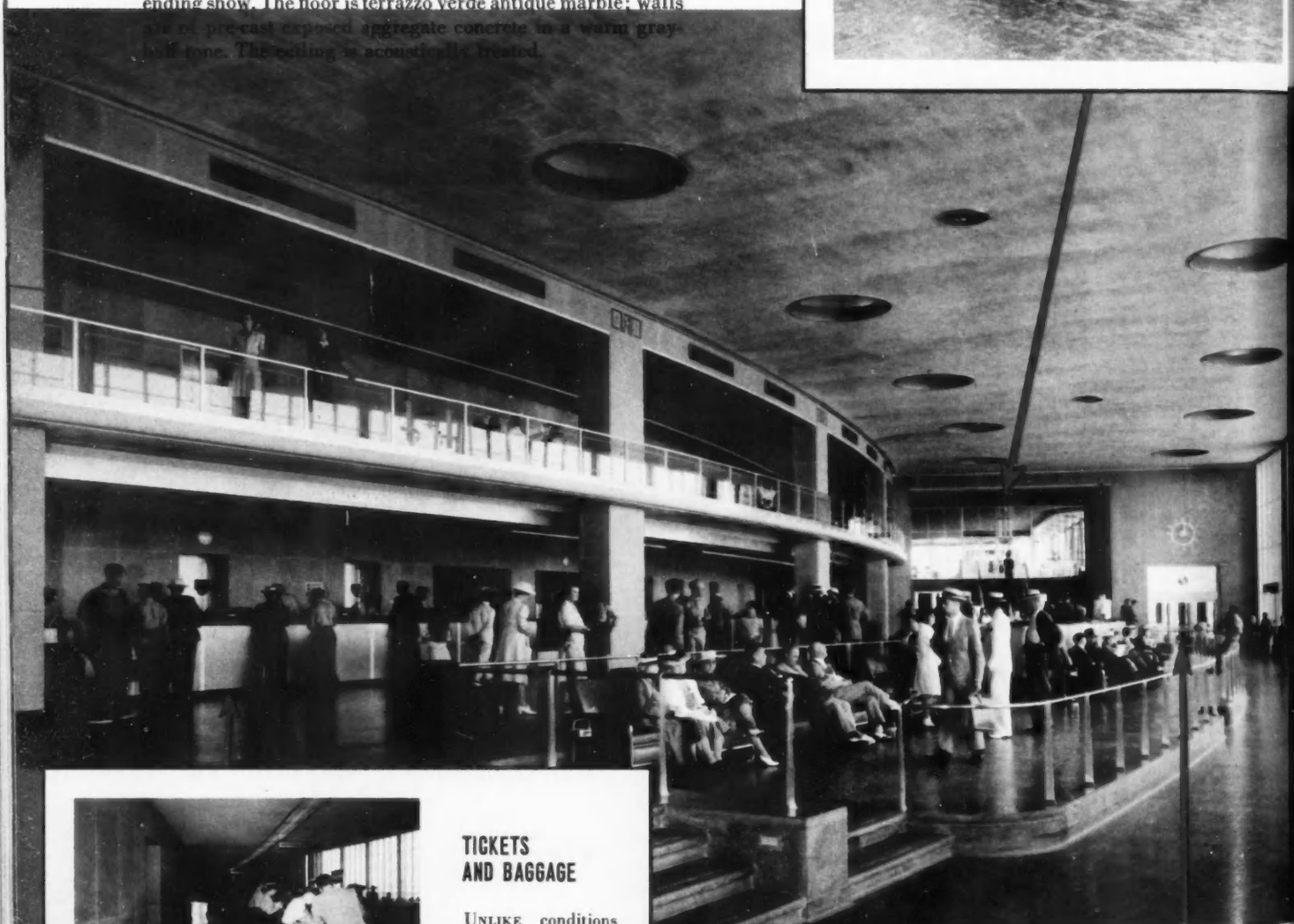
ALL OF THE BUILDINGS are of fireproof construction employing reinforced concrete and structural steel. Pile foundations are used under the Terminal building and portions of the hangar block; spread footings elsewhere. Exterior finish of the Terminal building and hangars is architectural concrete in which plywood forms of 12-in. width were employed with waste moulds for cornices and ornamental detail. Dividing partitions are of hollow tile, or—for office areas, etc.—of the movable metal type. Projected steel sash are used throughout the buildings. Observation decks and roof decks of the Terminal building are surfaced with gray-buff promenade tile. Interior floor surfaces in public spaces are terrazzo; in offices and work spaces floors are finished with cement, linoleum or asphalt tile.

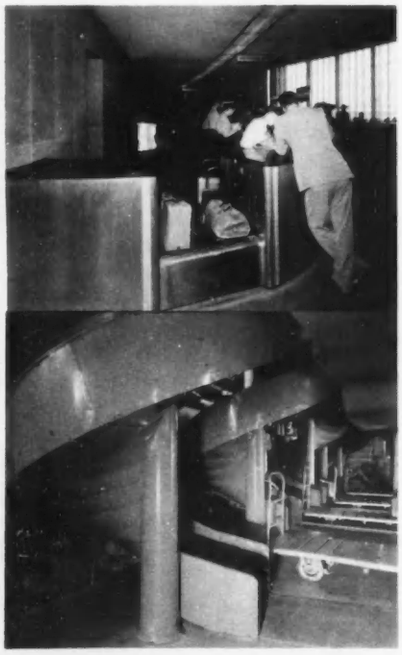


SECTION
MAIN WAITING ROOM
AND OBSERVATION TERRACE

PASSENGER FACILITIES

JUST as the disparate activities of the Terminal Building as a whole have been channelized and separated, so the facilities of individual areas have been organized in the most direct line of travel. Passengers may get from where they are to where they would be—to restaurants, ticket counter or plane concourses—without crossing the main paths of other areas. This activity is all centralized in the main Waiting Room with its 200-ft.-long window commanding an unhindered view of the field and sky activity. A stepped-down area, surrounded by a plate glass balustrade, provides loge seats for the never-ending show. The floor is terrazzo verde antique marble; walls are of pre-cast exposed aggregate concrete in a warm gray-buff tone. The ceiling is acoustically treated.



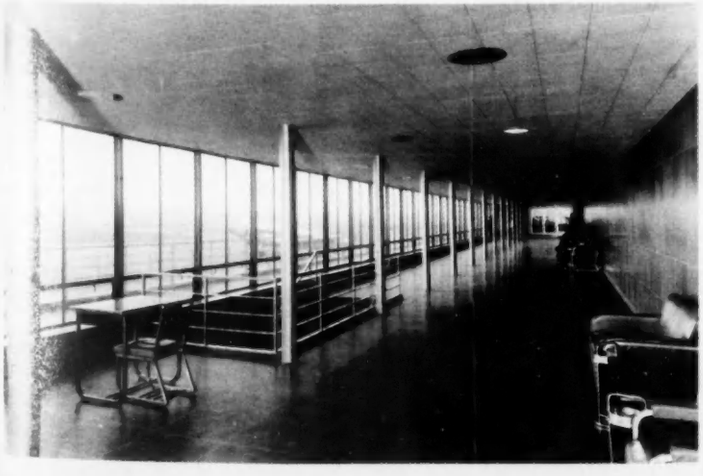


TICKETS AND BAGGAGE

UNLIKE conditions at some other large airports, by far the largest numbers of Washington passengers purchase tickets at the terminal. Hence, the sizable counters that are lined between the two entrance lobbies and convenient to passenger concourses. Here baggage is weighed (the scale indicators are mounted flush with the counter tops); movable platforms then tip the baggage down spiral chutes to waiting trucks for transfer to planes.

MAIN DINING ROOM

A STAIR with a balustrade of carved panels of non-breakable glass leads up to the mezzanine-level dining room where an unbroken wall of windows provides excellent light and a skyward view. The terrazzo floor is of columbine-blue marble; the walls are of cloth-backed rift-sawn oak veneer. Doors, trim and light-cove cornice are aluminum; the acoustical plaster ceiling is tinted pale blue. An outdoor dining terrace is a few steps lower than the dining room itself, providing an uninterrupted view for all. A quick lunch counter and coffee shop is on the floor directly below, reached by a short flight down from the main Waiting Room.



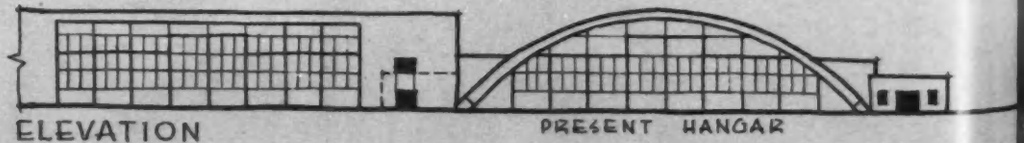
CONCOURSE

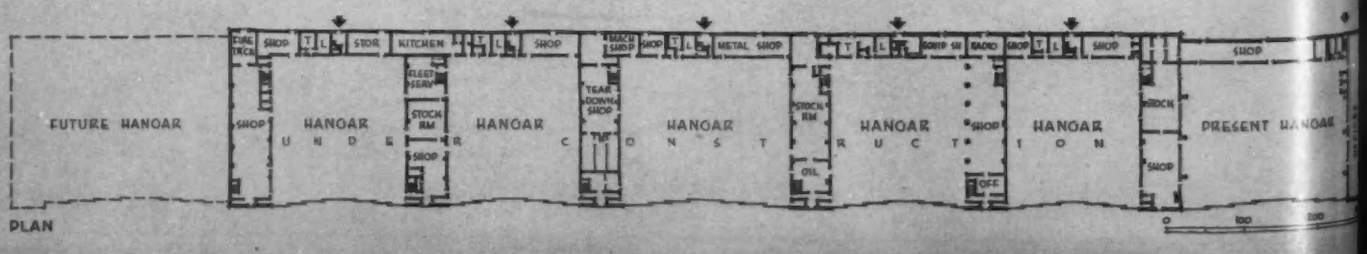
DOORS at either end of the room (depending on destination) open onto passenger concourses immediately above exits to the ground-level loading platforms. It is worth noting that this elevated concourse is part of the airport's long-range plan for future needs. With the large transport planes of the future with cabin floors some 10 ft. above the ground, it is anticipated that access to the planes will be provided directly from this upper level. Walls of the concourses are surfaced in peacock blue-green terra cotta units. Doors and trim are aluminum. With the baggage trucking concourse located back of the building line (see ground floor plan), the paths of passengers and baggage never cross.

MAIN RESTAURANT and outdoor dining terrace overlook the flying field, the Potomac and the city of Washington

HANGARS

THE HANGAR BLOCK (partially under construction) is located about 500 ft. south of the Terminal Building. The largest hangar (opposite) provides a 223-ft. wide door opening with available clear height of 45 ft. — ample for easy accommodation of the B-19, largest of the Army's latest planes, which has a wingspread of 212 ft. The hangars are fully equipped with shop facilities and are protected by an overhead sprinkler system. Across the north end of the building is an office section for various airlines maintenance and operating departments.

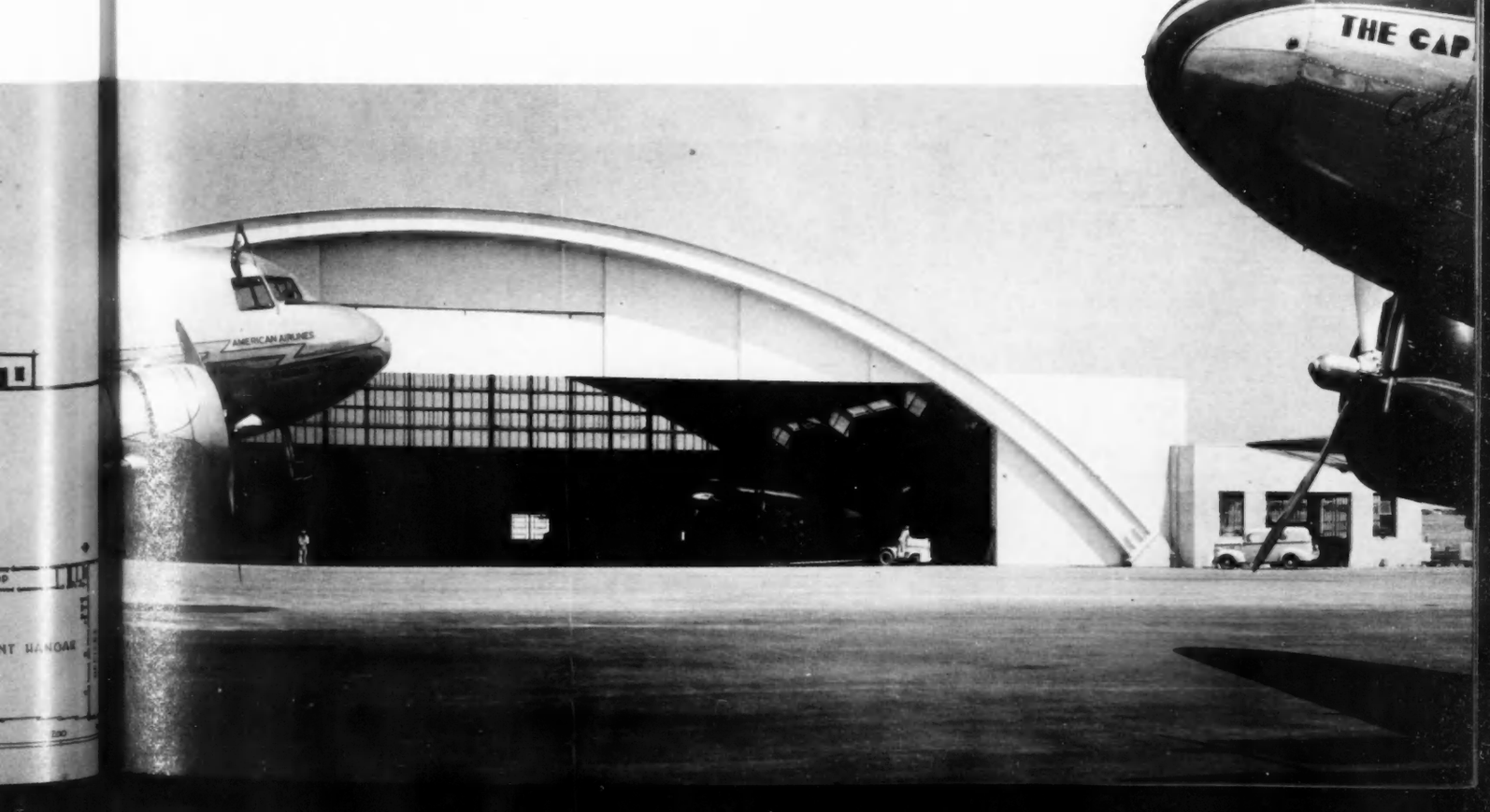




CONTROL TOWER

FLIGHT OBSERVATION, the keynote of the whole terminal, is nowhere more important than in the control tower atop the Terminal Building. From this lofty perch, there is clear visibility of the horizon in all directions, of every plane loading station and the entire length of each runway and the hangar apron. Scientifically designed in collaboration with the Airport Section of the Civil Aeronautics Authority, the shape and size, angle placement of the glass and layout of equipment approach the ultimate in functional integration. The tower is constructed of stainless steel frame with aluminum muntins and trim. The glazing is a bluish-green heat-absorbent glass which eliminates actinic rays and keeps reflections to a minimum. Large windshield wipers clear the glass in inclement weather. The room is air conditioned and fitted with the most advanced radio equipment for airway traffic control.

THE COFFEE SHOP



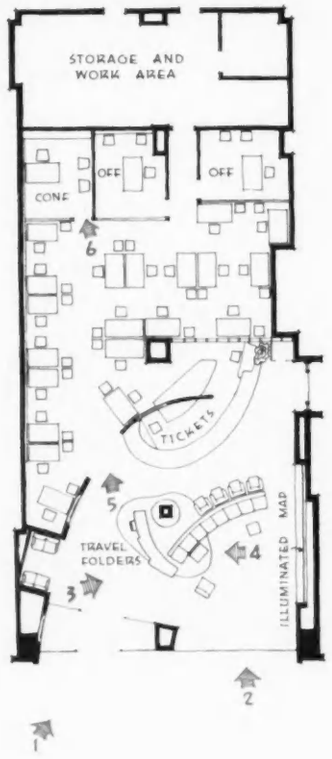
1

CITY TICKET OFFICES

PENNSYLVANIA RAILROAD TICKET OFFICE, CHICAGO, ILL. RAYMOND LOEWY, DESIGNER; C. M. BUCK, ASSOCIATED ARCHITECT. One of the older forms of power-driven transportation, the railroad has staged an impressive renaissance in recent years. In place of chains of wooden carriages drawn by asthmatic iron horses, streamlined, custom-fitted high-speed trains now streak the continent. In their wake, up-to-date facilities of every type are gradually replacing the other vestigial remains of an out-moded system. One of the newer services is the downtown city ticket office, designed to serve the traveler more quickly and efficiently and to convey the sense of air-conditioned comfort which contemporary rail travel implies. In the offices shown on these pages, the basic design intent was "to do away with every psychological and physical barrier to planning a trip or simply to buying a ticket to the next town."

A street-front wall of clear glass, set back from the building line, provides customers and passers-by with an inviting stimulus to travel. The company name, in bronze letters, is mounted on a proscenium of illuminated sheets of opalescent glass. Structural columns are also sheathed in the glass, serving both as light sources and as dramatic backgrounds for advertising. The floor is of pin-striped gray rubber; trip planning desks are in natural wood with bronze legs. Light and air conditioning elements are contained in a dropped ceiling.

2



Photos by Hedrich-Blessing Studio

3

4

ROUTE MAP

The focal point of attention both from inside the building and from the street is the illuminated map set in a marble-surfaced wall (arrow 3 on map above). The names of crack trains, their itineraries and times of departure are made up of letters, figures and strips of varicolored plastics. A mechanism controls a "continuous performance." As each name lights up, its corresponding route flashes across the continent. The cycle repeats at regular intervals, so that passengers may see where and when connections are made for any given destination. The "audience" is comfortably accommodated in a central lounge grouping

6

5

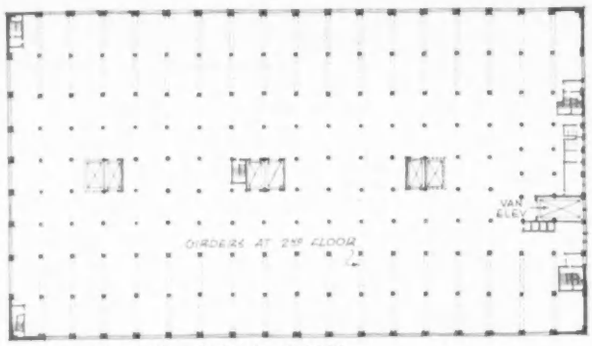
DEPARTMENT STORE WAREHOUSE

BUTTONWOOD WAREHOUSE, PHILADELPHIA, PA. SIMON & SIMON, ARCHITECTS. On city streets where considerable truck loading and unloading occur, traffic "flow" becomes a cynical misnomer, and congestion and lost tempers give impressive evidence of something wrong. A more intelligent concept of land use; an integrated system of highways and city street routings and a broader approach to city planning in general are the eventual solutions. But the Buttonwood Warehouse, designed to serve Lit Brothers department store, is proof that architects can do much to ameliorate conditions even under our present system.

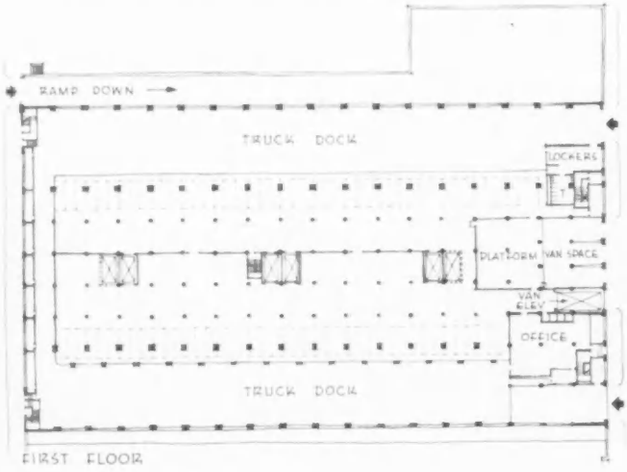
All loading and unloading of trucks is handled within the building envelope. The railroad siding serves the structure at a level below that of regular street traffic. Truck servicing facilities and space for backing, filling and turning are provided off the street. And that is a sizable amount of clogged-traffic relief when it is realized that 120 trucks can be accommodated at one parking. Cost of the building: approximately $2,000,000.

A few significant notes on the building and its location:
SITE. The store is less than a mile distant; the warehouse, while outside the area of densest traffic, is in the geographical center of the population area it serves. The Reading Railroad tracks adjoin the property.
FACILITIES. An elaborate conveyor system (see opposite page), supplemented by freight and van elevators, reduces physical labor to a minimum. Spaces are provided for warehousing according to store departments. Goods may be handled from freight car or truck to warehouse floor; from warehouse to store; from store to warehouse to local delivery truck, or from warehouse directly to trucks. In addition, an air-cooled fur and rug storage vault is provided (on the fourth floor) and areas are arranged for furniture refinishing, truck repair, cashier's department and employees' and truck drivers' facilities.
STRUCTURE. Reinforced concrete skeleton; flat slabs with drop panels and mushroom heads; exterior brickwork in two tones, steel sash, aluminum trim. To carry the load of the columns above the clear truck-operation areas, the full height of the second floor is used for concrete trusses extending from slab to slab—2 ft. 2 in. thick, 14 ft. 6 in. high and just under 58 ft. in length.

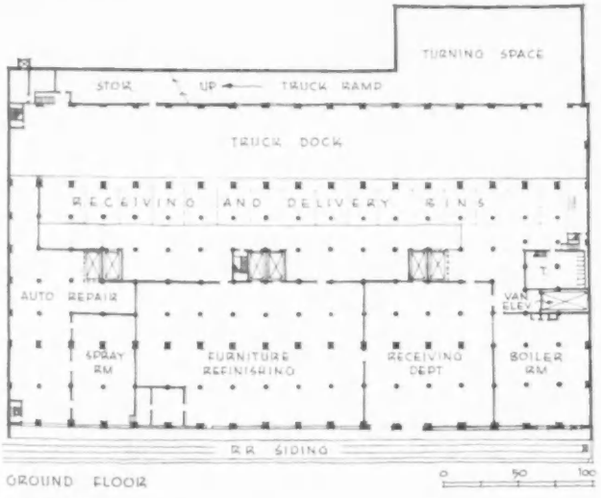
Photos by



SECOND AND THIRD – TYPICAL FLOORS



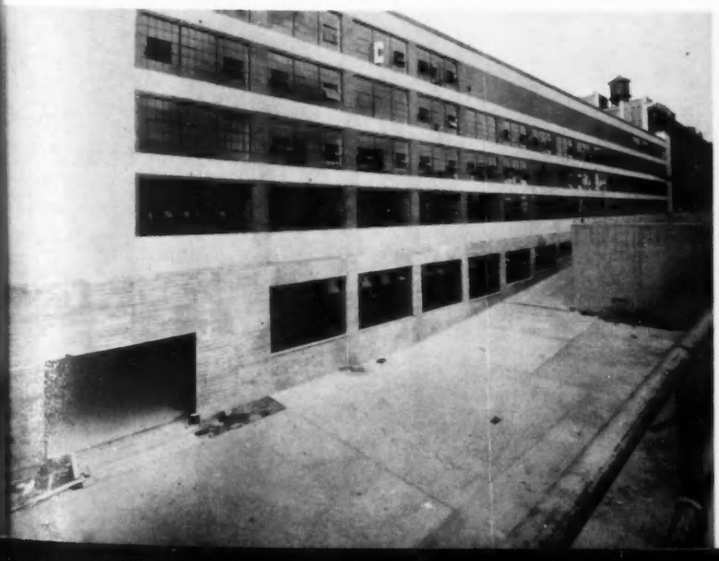
FIRST FLOOR

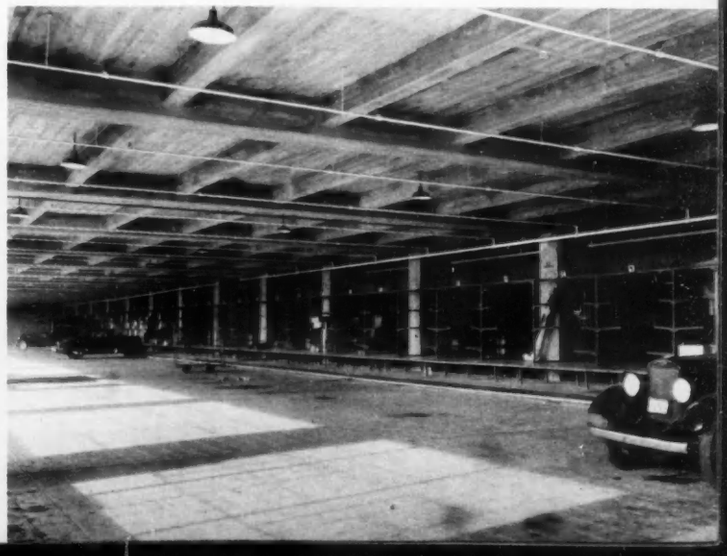


GROUND FLOOR

CONVEYOR SYSTEM. Elevators assist in the vertical movement of such items as pianos and large furniture, but the majority of both incoming and outgoing goods move along the conveyor system, consisting of 24 separate lines. A two-way main receiving conveyor is centrally located and extends from ground to fourth floors. Supplementary conveyors across the building bring both carload and truckload freight from receiving platforms to this main mobile artery. A special belt handles rugs, linoleums, etc., for distribution to the delivery truck or to storage on the first floor. At a level slightly below that of the first floor, conveyors converge at a relay depot or markers' pit. Goods sent from the store for local delivery slide to this relay depot. From here five separate conveyors lead to station or transfer points, where additional belts carry goods along the bins at the back of truck platforms. All goods taken from stock throughout the warehouse are similarly sent to the markers' pit for route sorting

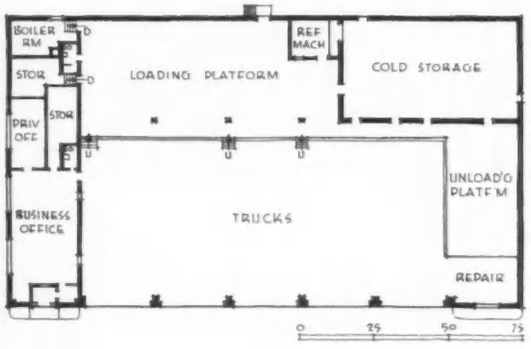
Photos by Bond Brothers





Photos by Gottscho

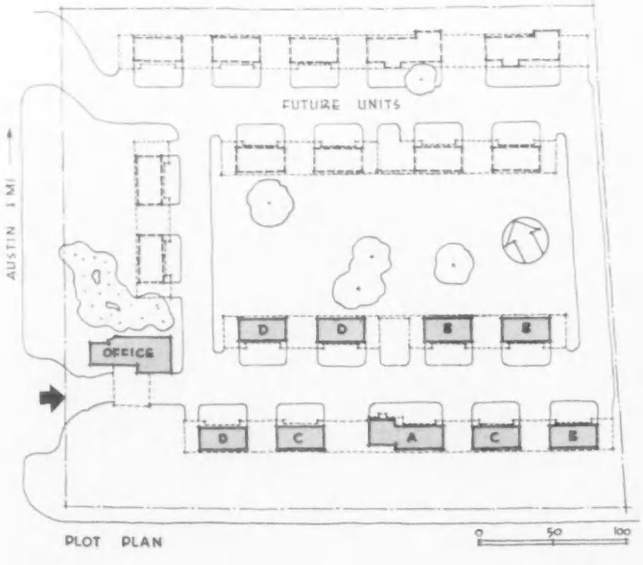
DISTRIBUTION STATION



SCHAEFER BREWING CO. DISTRIBUTING STATION, FAIRFIELD, CONN. EGGERS AND HIGGINS, ARCHITECTS. Developments in transportation facilities invariably bring a demand for new types of buildings to serve them and open up new opportunities for the building designer. The trucking transfer point or temporary storage building for produce in transit—like the one shown on this page—is a case in point. Located in the center of a wide industrial area, the station includes a business office, cold storage room, trucking platform and repair shop. Daily deliveries of beer in kegs, cans and bottles are kept in the storage room until needed for local delivery. Exterior doors from this room are opened in cold weather, obviating the need for year-round operation of refrigeration machinery. The truck space is large enough to house all trucks at night. Truck platforms are of reinforced concrete; exterior walls are brick. The roof is framed with long-span steel girders and wooden joists.

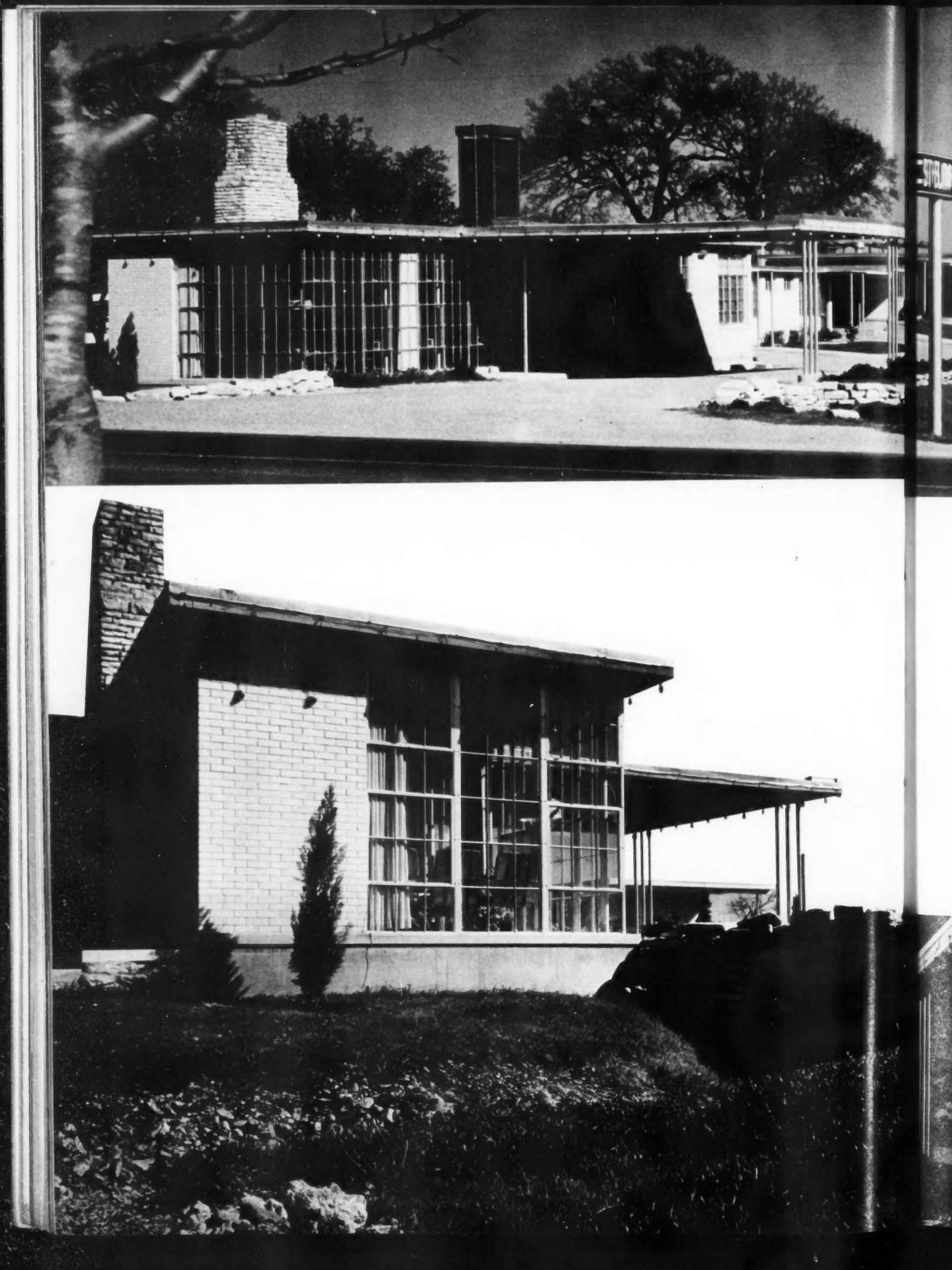
Photos by Gottscho

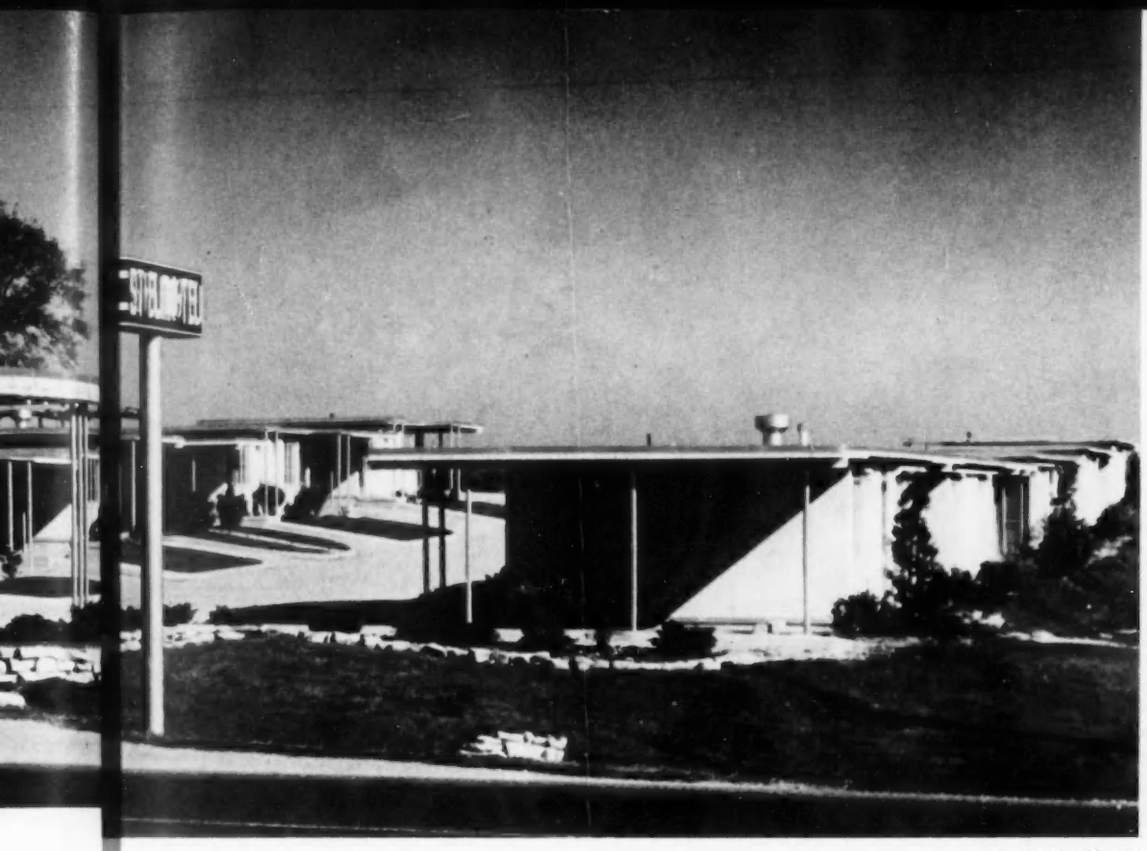
MOTORISTS' ACCOMMODATIONS

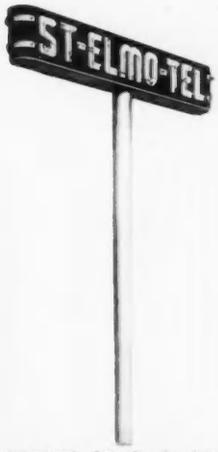


PLOT PLAN

ST. ELMO-TEL, NEAR AUSTIN, TEXAS. ARTHUR FEHR, ARCHITECT. "From Hotel to Mo-tel" might well be a chapter title in the story of facilities designed to serve automotive transportation. Not at all to suggest that the latter has replaced the former. But for certain travel-weary groups—for instance, families with much luggage who have driven all day, autoists who shrink from city driving at night or those who simply prefer country sleeping—the "mo-tel" serves an important supplementary need. Coincident with the development of good highways, the new type of roadside hotel appeared in embryo form—seried ranks of tiny imitation "homes," some good, many "picturesque," and others beyond description. As the serious need for this new type of accommodation has grown, and increased comforts and amenities have been demanded, architects at last have been called in to give a co-ordinated over-all approach to the design. One of the most newsworthy is the St. Elmo-Tel. The site anticipates expansion of the project to twice its present facilities.

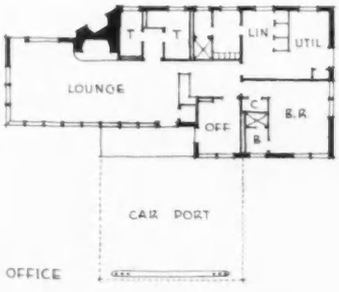






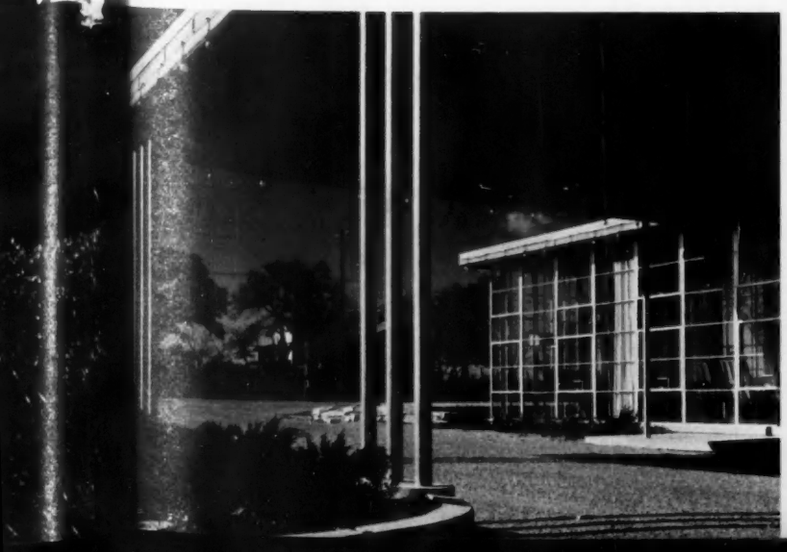
ARTHUR FEHR, Architect
(continued)

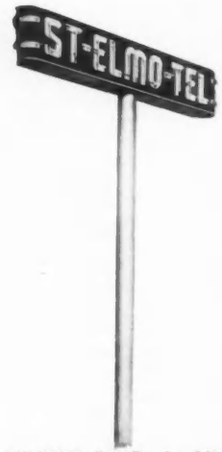
Photos St. Thomas



OFFICE AND LOUNGE UNITS

AN AIR-CONDITIONED, many-windowed lounge greets arriving guests. Fireproof construction—as in all of the units—consists of concrete floor slab, brick walls and insulated concrete roof slab surfaced with gravel. The sash are of steel. Beyond this building in the area between the present and proposed future units are gardens, croquet courts and a putting green. The carefully selected site of the "mo-tel" is near a highway rotary about one mile south of Austin. Cost of the project was slightly less than $50,000.



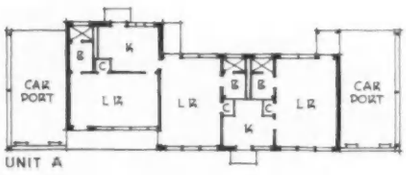


ARTHUR FEHR, Architect
(continued)

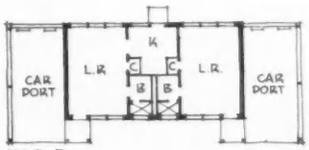
Photos by St. Thomas

ACCOMMODATIONS

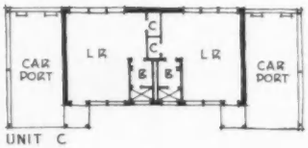
FOUR UNIT TYPES are used along the "mo-tel" lane. Of the 19 rental areas, five are equipped with kitchens. All have telephone connections. Heat is supplied by a circulating hot water system with heater and storage tanks in the two units nearest the office-lounge building. The insulated hot water supply pipe is run overhead under the roof overhang and is used architecturally to join the units visually. Return pipes are run underground.



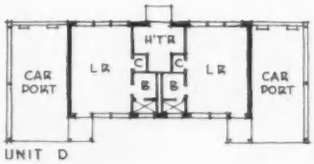
UNIT A



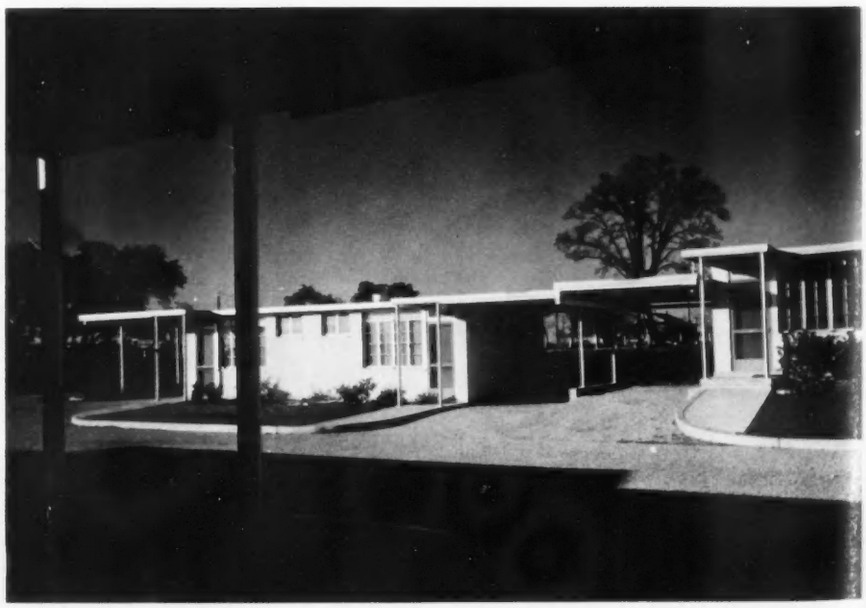
UNIT B



UNIT C

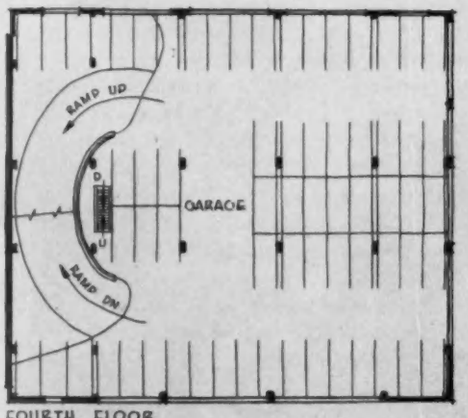


UNIT D

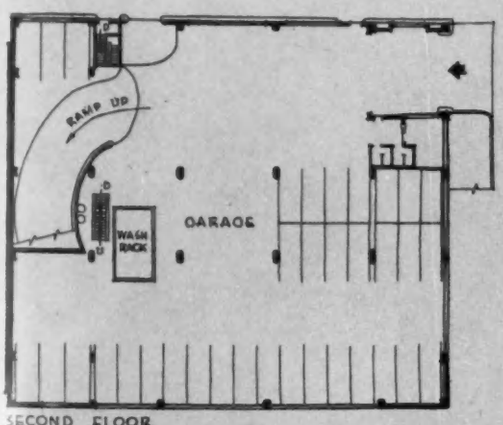


DOWNTOWN GARAGE

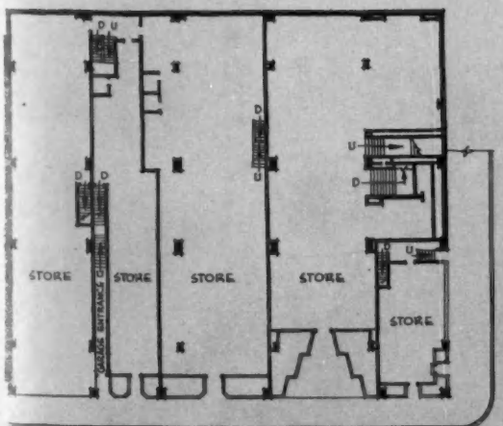
COMMERCE TRUST GARAGE, KANSAS CITY, MO. KEENE AND SIMPSON, ARCHITECTS. This impressive structure is the direct result of the effort of a group of citizens who banded together to do something about their downtown parking problem. President of the Downtown Committee, formed to promote better building construction, modernize old structures, control objectionable signs and provide adequate parking space was James M. Kemper, President of the Commerce Trust Company. To set an example, the bank purchased the property immediately adjoining, tore down dilapidated buildings and erected this garage. Advantage was taken of the sloping site to provide several shops on Main Street at the lower level. Projecting signs are prohibited; all leases call for signs and awnings to be erected in the spaces provided for the purpose. Spanning the alley between the garage and bank at the third floor level is a bridge connecting with the main banking floor. Persons having business at the bank may drive up to this floor and park for 15 minutes without charge. The bridge also directly serves the office building lobby. Garage space is provided for 250 cars. Construction is of reinforced concrete with roof frame of light structural steel. Steel commercial projected sash, placed 6 ft. from the floor of each garage level, are equipped with insulation-type glass. Story height floor to floor is 10 ft. 6 in., which requires only a nine per-cent grade for the 20-foot ramp. Total cost of the project, including land, building and equipment, came to $478,000. The building cost was 24.8 cents per cu. ft.



FOURTH FLOOR



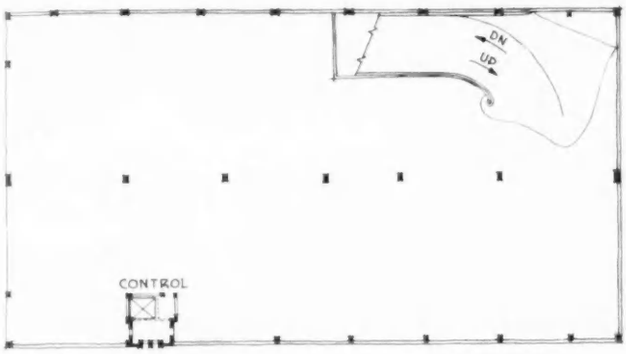
SECOND FLOOR



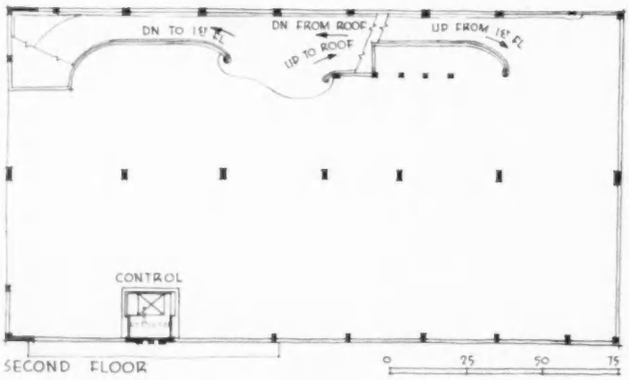
FIRST FLOOR

PARKING DECK

SHOPPERS' PARKING DECK, DETROIT, MICH. SMITH, HINCHMAN & GRYLLS, INC., ARCHITECTS. One of the most economical types of parking structures that has been devised to relieve downtown traffic congestion is the open-air deck. In the Detroit project, built on a 110-by-200-ft. plot, the ground level and two floors above grade provide normal space for 270 cars. Maximum capacity, using aisle space, is 300. In actual operation, the average turnover is two and a half times daily. Handling an average of 800 cars a day calls for a staff of six attendants and a cashier. The structure is entirely of reinforced concrete, employing long span shallow depth beams and girders and a minimum of columns, thus increasing the ease of operation and making the parking of cars more flexible. The four-inch floor slabs were increased in thickness at the sides of some of the girders to form a more satisfactory T, and at several places the floor was warped to provide adequate headroom over ramps.



ROOF



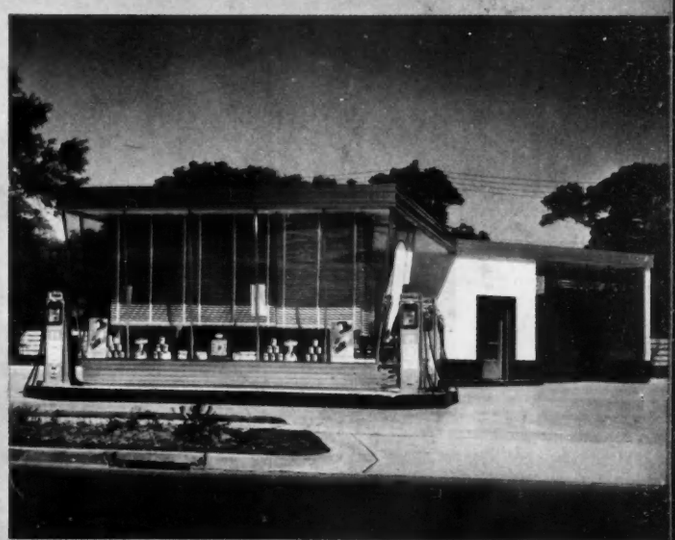
SECOND FLOOR

MODERN GASOLINE STATIONS . . .

Harold Holiday Costain

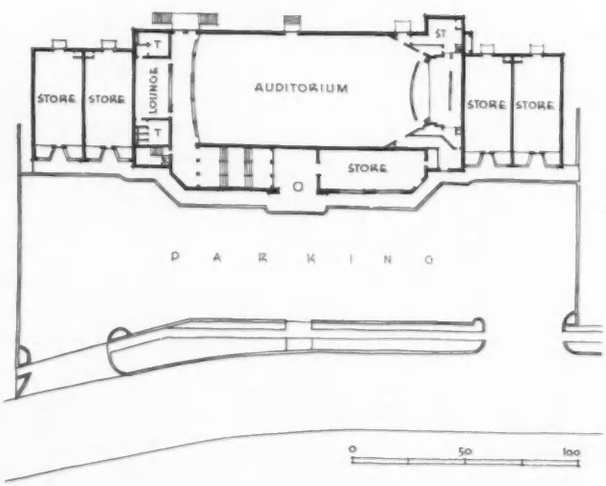
range from tidy, somewhat sentimental little structures whose design expressions are determined by their proximity to highly restricted residential districts or landscaped parkways . . .

Photos by St. Thomas



. . . to rationalized service buildings planned both to function as efficiently as possible and to dramatize the station facilities and service process rather than conceal them

Photos by St. Thomas

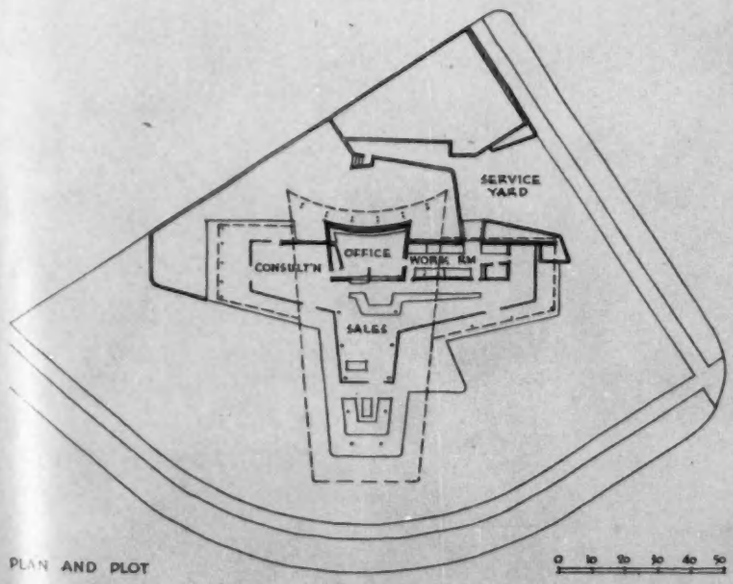


DRIVE-IN NEIGHBORHOOD GROUP

THEATER AND STORE BUILDING FOR JEFFERSON AMUSEMENT CO., BEAUMONT, TEXAS. STONE & PITTS, ARCHITECTS. One effective step toward "thinning out" a city, relieving downtown congestion and increasing the amenities of urban living is establishment of decentralized neighborhood shopping centers. Located at a point between city and suburb, the Beaumont group serves a wide residential area. Approximately 80 per cent of those using the facilities arrive by automobile or suburban bus line. Wise planning included generous off-the-street parking space, thus obviating the formation of a new nucleus of traffic congestion. Heavy rainfall conditions dictated the basic scheme of a single unit with continuous protective marquee. Structurally the building consists of concrete spread footings and grade beams, exterior walls of stucco-surfaced hollow tile; steel stud interior partitions and a built-up roof over wood frame. Building cost, including ventilation system, light fixtures and architect's fee, but excluding furniture and equipment, was 23 cents a cu. ft.

Mott Studios

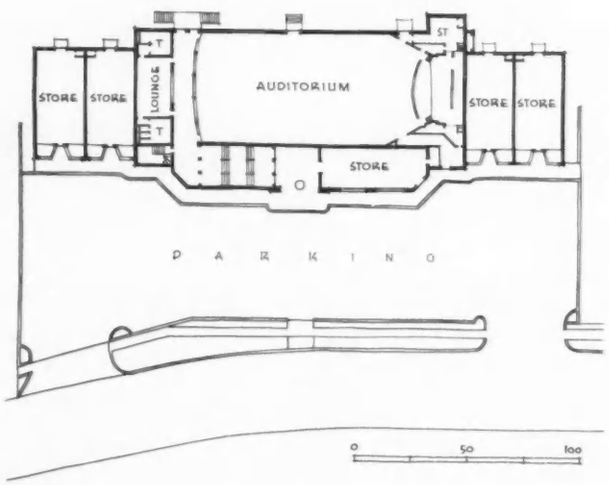
DRIVE-IN FLOWER SHOP



PLAN AND PLOT

McELDOWNEYS, LOS ANGELES, CALIF. JOSEPH L. FEIL, DESIGNER; S. P. BARNES, ENGINEER. Something of an anachronism arose in the planning of this extraordinary shop for the sale of flowers. While the drive-in concept was considered basic, a large amount of parking space was not necessary. This is due to the fact that sales (unlike those of a grocery store or restaurant) are on a quick pickup basis. A controlling design factor was the need for visibility of stock. Hence all walls except that at the rear are of glass, and the roof over the glazed area is supported on inconspicuous tubular steel columns. The T-form of the building enhances the display for passing motorists. The structure has a light steel frame welded or bolted to base plates which rest on foundation piers. The latter are tied together with reinforced concrete tie beams. To support the roof, a light steel cantilever frame with wood joists was used. Welded gussets join roof and columns. Extensive air conditioning maintains ideal atmospheric conditions for the perishable merchandise.

Photos by St. Thomas



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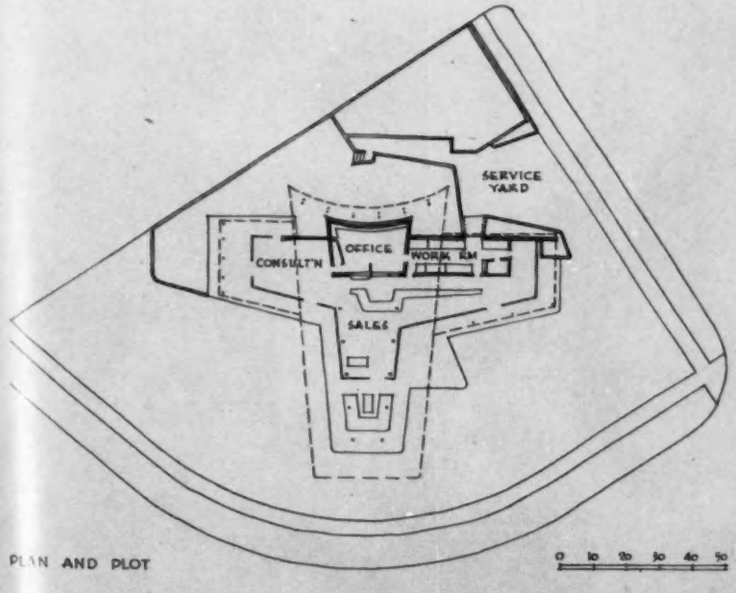


PLAN AND PLOT

McELDOWNEYS, LOS ANGELES, CALIF. JOSEPH L. FEIL, DESIGNER; S. P. BARNES, ENGINEER. Something of an anachronism arose in the planning of this extraordinary shop for the sale of flowers. While the drive-in concept was considered basic, a large amount of parking space was not necessary. This is due to the fact that sales (unlike those of a grocery store or restaurant) are on a quick pickup basis. A controlling design factor was the need for visibility of stock. Hence all walls except that at the rear are of glass, and the roof over the glazed area is supported on inconspicuous tubular steel columns. The T-form of the building enhances the display for passing motorists. The structure has a light steel frame welded or bolted to base plates which rest on foundation piers. The latter are tied together with reinforced concrete tie beams. To support the roof, a light steel cantilever frame with wood joists was used. Welded gussets join roof and columns. Extensive air conditioning maintains ideal atmospheric conditions for the perishable merchandise.

SUPER MARKETS

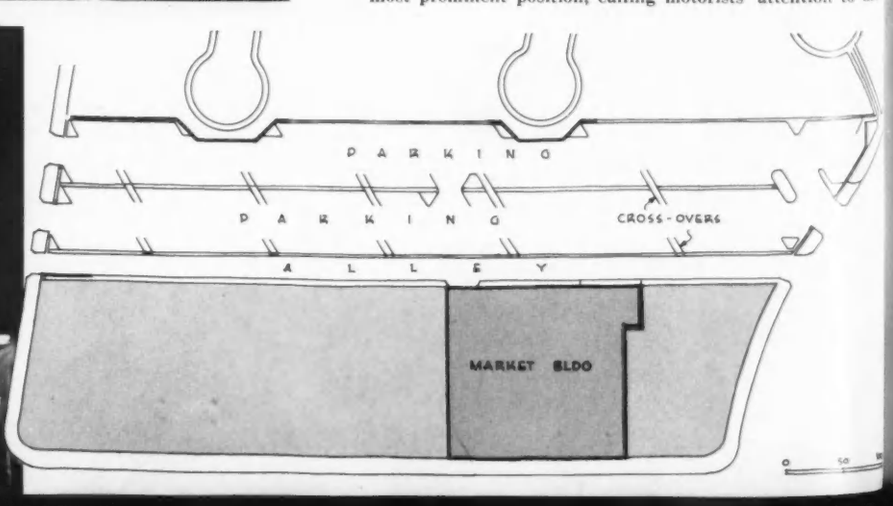
THE OFFICE OF STILES CLEMENTS, ARCHITECT

Photos by Floyd Ray, Fred R. Dapprich, and Mott Studios by Merge

SIMPLE FORMS and generous wall spaces provide background for signs by day and tube lighting by night — bold masses easily understood at the speed of present-day traffic

EDITORIAL NOTE: The following discussion was prepared especially for our Transportation issue by Architect BEN H. O'CONNOR of THE OFFICE OF STILES CLEMENTS

THE SUPER MARKET, a departmentalized food store offering for sale practically every item of food from cornstarch to caviar, is one of the outstanding results of urban decentralization in the Los Angeles region, and the motor car is one of the principal contributing factors. To understand the effects of transportation on the design of certain types of buildings in this metropolitan area, one must first realize the effects transportation has had on the community itself. In probably no other city has urban decentralization occurred so spontaneously. Three principal factors have contributed to this condition: automobile transportation, climate and rapid increase in population. Of the three, transportation is probably the most potent. Given only a mild climate and a meteoric rise in population, we would still find a relatively limited occupied area had we not had the automobile for easy accessibility of distant residential developments. Furthermore, in this coastal plain, the normal process of development of new residential areas



TYPICAL PLOT PLANS — one with the parking area in the most prominent position, calling motorists' attention to the

has frequently been reversed; the sub-divider has been able to locate new real estate offerings without regard to commercial and industrial developments. Commerce and trade follow each new residential growth to serve the primary needs at least — food, clothing, amusement, etc.

Before the full impact of the city's phenomenal growth had been felt, the so-called "Drive-In" market was replacing the traditional neighborhood grocery. Usually consisting of a shallow building extending across the rear of a wide lot, the Drive-In afforded room for the customer to take his car off the street and provided somewhat easier parking facilities.

There were, however, serious disadvantages. The available amount of parking, for instance, hardly exceeded that of curb parking furnished by city streets, while lack of space within the buildings prevented handling sufficient volume of merchandise. As such drawbacks became apparent, far-sighted merchandisers saw the need of meeting competition with more efficient operation. The answer seemed to rest in volume, and so the size of the building began to increase to provide the facilities required. Here again transportation comes in, because it is obvious that the larger market must draw on a large territory for support and practically all such markets exist on a cash-and-carry basis.

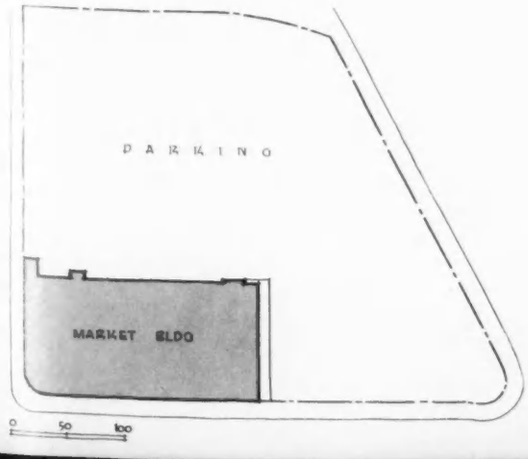
The type of building developed for the Super Market is simplicity itself. The need for flexibility in interior display case arrangements has resulted in the use of light wood trusses spanning upwards of one hundred feet, thus creating a hollow shell, the outer walls of which are usually of reinforced concrete or reinforced brick. The principal front may be entirely open, protected only by collapsible gates, or it may be enclosed with traditional but generous display windows; or, as in some of the more recent markets, it may be equipped with complete display windows and bulkheads which are raised behind the front spandrel in summer and lowered in winter. In area the buildings average between 20,000 and 25,000 square feet. Parking areas four to five times as large as the building area are required.

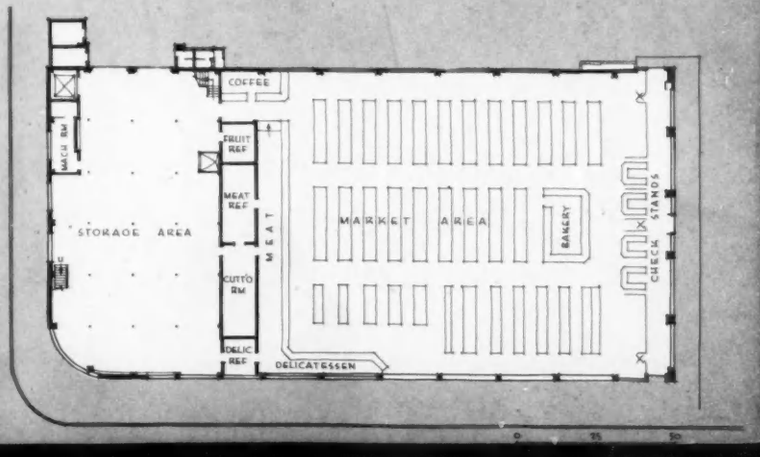
The actual arrangement of the interior varies with the operating company. In order to maintain a volume business, ample storage areas must be provided for all departments — transportation again. Large, fast trucks make possible daily deliveries. Both belt and trolley type conveyors are used to move supplies. Loading docks must be ample and accessible and so located that refuse may be conveniently disposed of and still remain out of sight. A complete bakery may be included for preparation and baking of bread on the premises. Assembly rooms for demonstrations, lectures and other types of meetings are sometimes provided on a mezzanine or balcony floor.

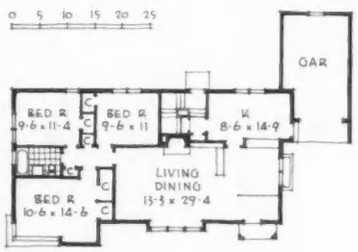
All in all, the design of the Super Market represents an advance in architectural thinking in at least one respect. In filling the needs of a merchandising process, the building which houses that process must be as efficient as the process itself; else both fail. The buildings which house the so-called Super Market have been developed for that purpose. Their form, their construction, their arrangement have all been designed to make their architecture an integral part of the process they serve.

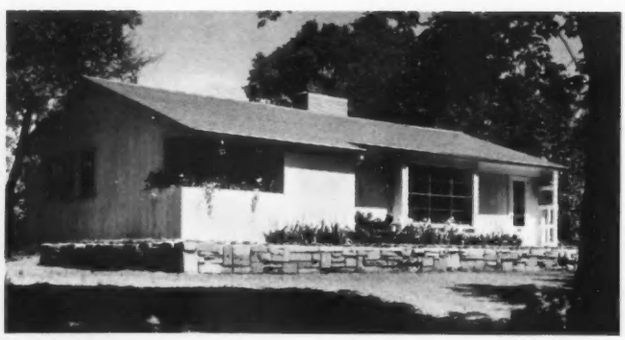
COMPLETE LACK OF COLUMNS permits an infinite variety in display arrangement

ample facilities; the other, with parking in back of the building, flanked by adjoining businesses









Photos by Hedrich-Blessing Studio

HOUSE IN ILLINOIS

ARCHITECT'S OWN HOME, CHAMPAIGN, ILL. GRANVILLE S. KEITH, ARCHITECT. A compact, one-story, three-bedroom house with garage attached. As there are no servants, the kitchen is designed as an attractive part of the general living area. The planning of the garage is of particular interest to those in towns where building laws forbid direct entrance from garage to house. By recessing the garage door, space is gained for a kitchen entrance, and the projecting roof serves as a shelter in rainy weather. Exterior walls are white-stained pecky cypress vertical boarding; sash are aluminum, double hung, and the roof is covered with asbestos shingles.

TRANSPORTATION NOTE: The day is happily almost past when the garage is treated as if it were a disease and placed out of sight at the back of the lot. Too frequently still, however, it is handled in design as an unwanted appendage. In each of the houses shown in this section, the garage has been given considerate attention, and the result in each case is increased livability. This closer integration of house and garage is but healthy respect for the fact — which is hardly news — that we live in a motor age.

Looking across the kitchen serving bar to the dining area. Note both the glass panel that shields the front door and the blind that lowers to close off the kitchen entirely. Kitchen walls are gray linoleum; table and counter tops are eggplant brown. The floor is jaspe, with a purple-brown border and inset of tangerine

1

2

Photos by St. Thomas

HOUSE IN NORTH CAROLINA

A PROFESSOR'S HOME, DURHAM, N. C. WILLIAM POTTER, ARCHITECT. Planned around the big living room, the house spreads out to obtain cross ventilation in each of the rooms. The dining area is treated as an alcove of the main living room. In the bedroom wing is the study, desirably isolated from the main living area by a book-lined hallway. A small basement contains heater and storage rooms. More often than not the owner comes to the house by car; hence the prominent location of the garage and incorporation of a front hall entrance directly from it. Walls of the house are of whitewashed brick veneer over wood frame. Sash are steel casements.

3

1. General view showing garage and service wing at right

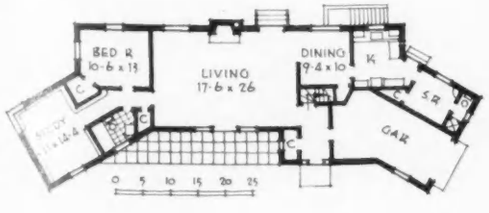
2. A pair of glass-block panels flank the front door

3. A brick terrace opens off the living room on the south

4. Plaster walls are painted a warm coppery tone; trim is white

5. The glass doors lead to the terrace; beyond is the hall to the study

4



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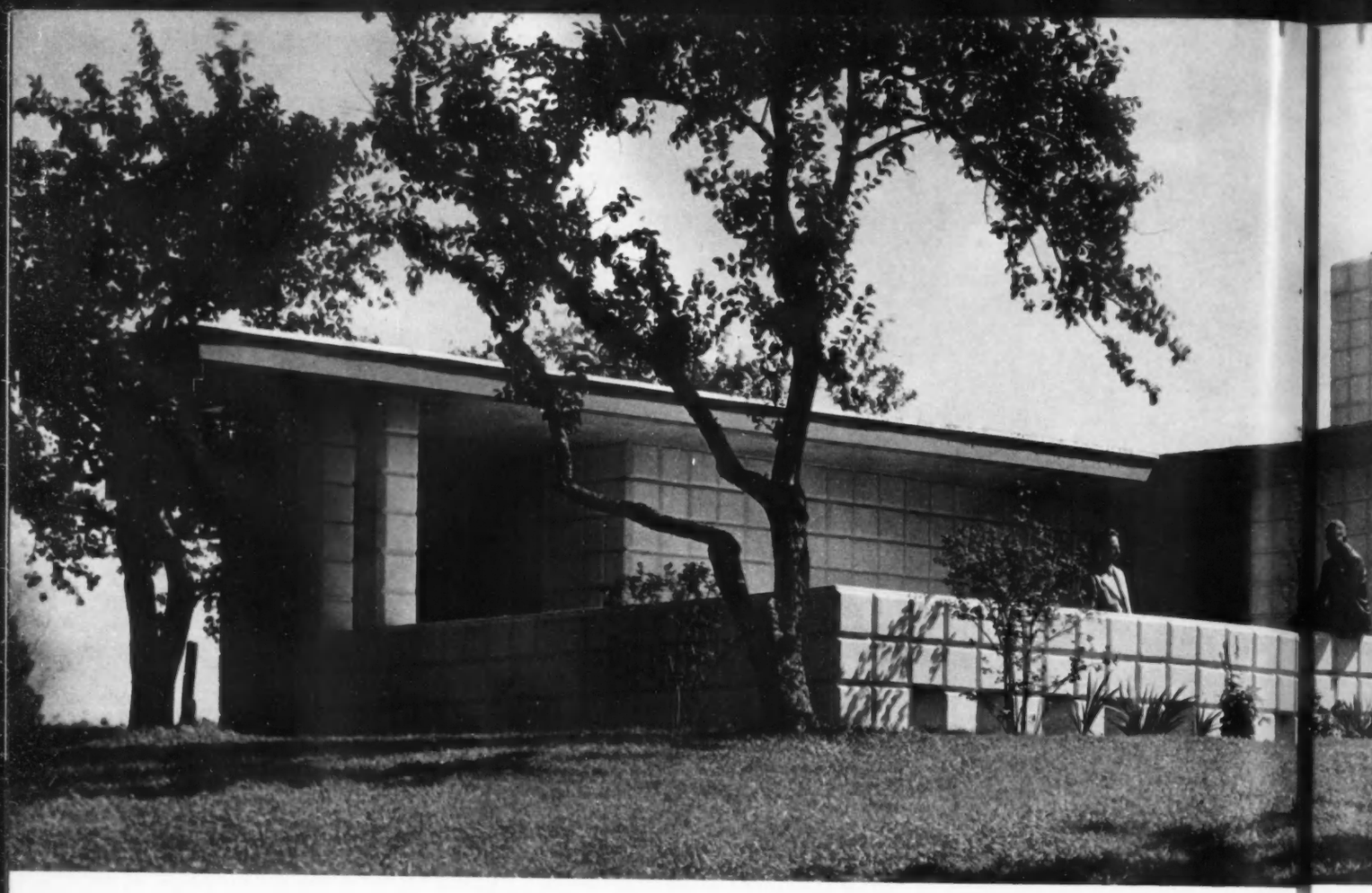
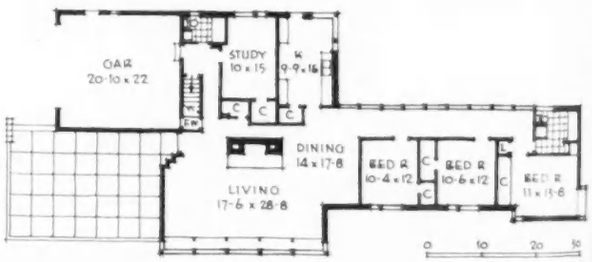
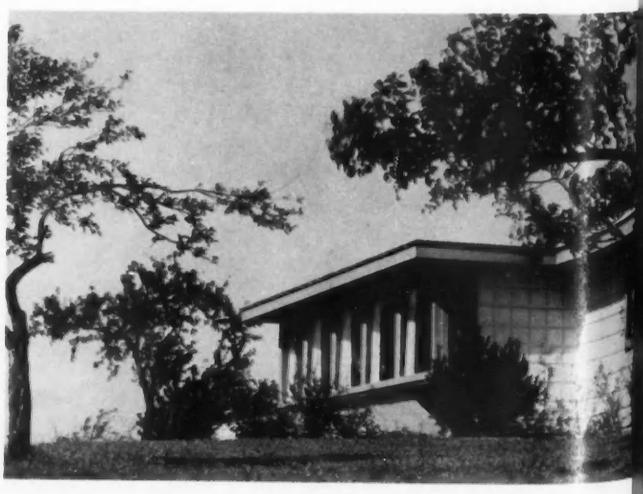
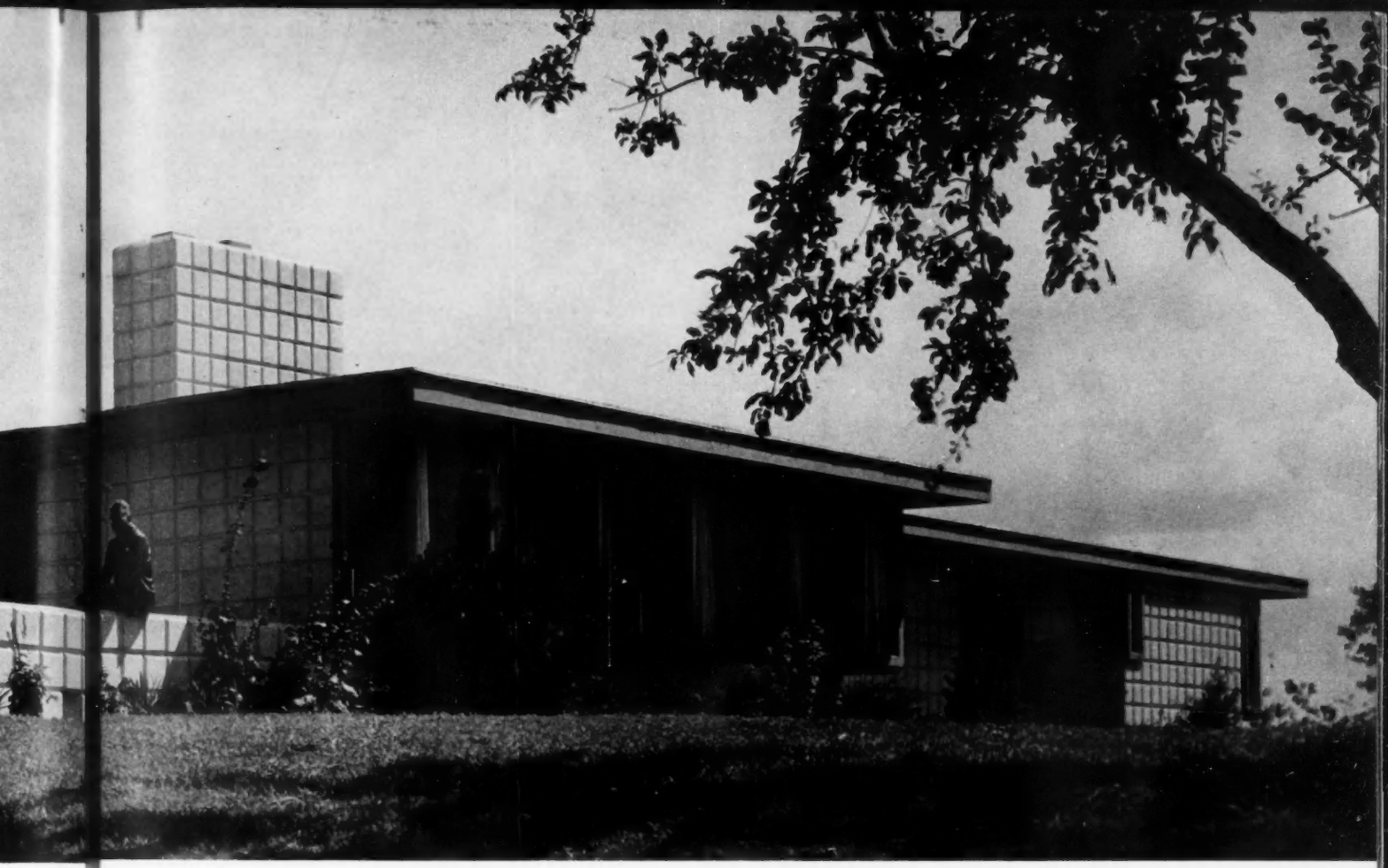






Photos by Elmer L. Astleford

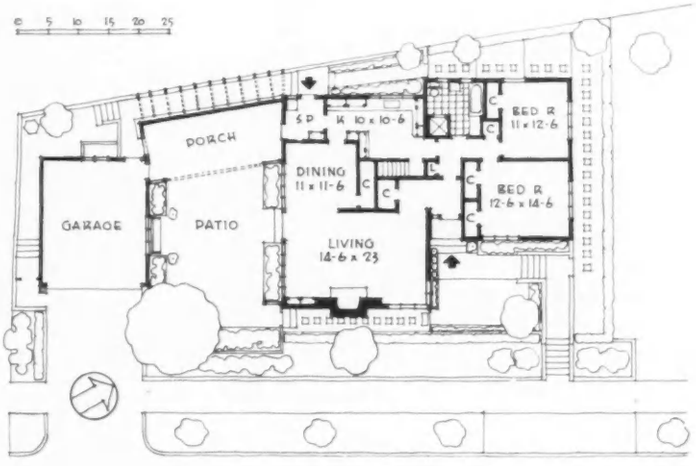


HOUSE IN MICHIGAN

HOUSE AT PETOSKEY, MICH. ALDEN B. DOW, ARCHITECT. A flat-roof house in northern Michigan, a region which, as the architect comments, "is extremely cold in winter and has snow four and five feet deep . . . This snow, furthermore, ruled out excessive walks and drives." The garage and front door, therefore, are closely related, and the garage is frequently used as the main entrance. Its placement, incidentally, forms a desirable shielding wall at one side of the front terrace. Walls of the house are waterproofed unit cinder block; exterior wood trim is painted turquoise. Interior partition walls are finished in natural plaster; the carpet in the living-dining area is bright red.

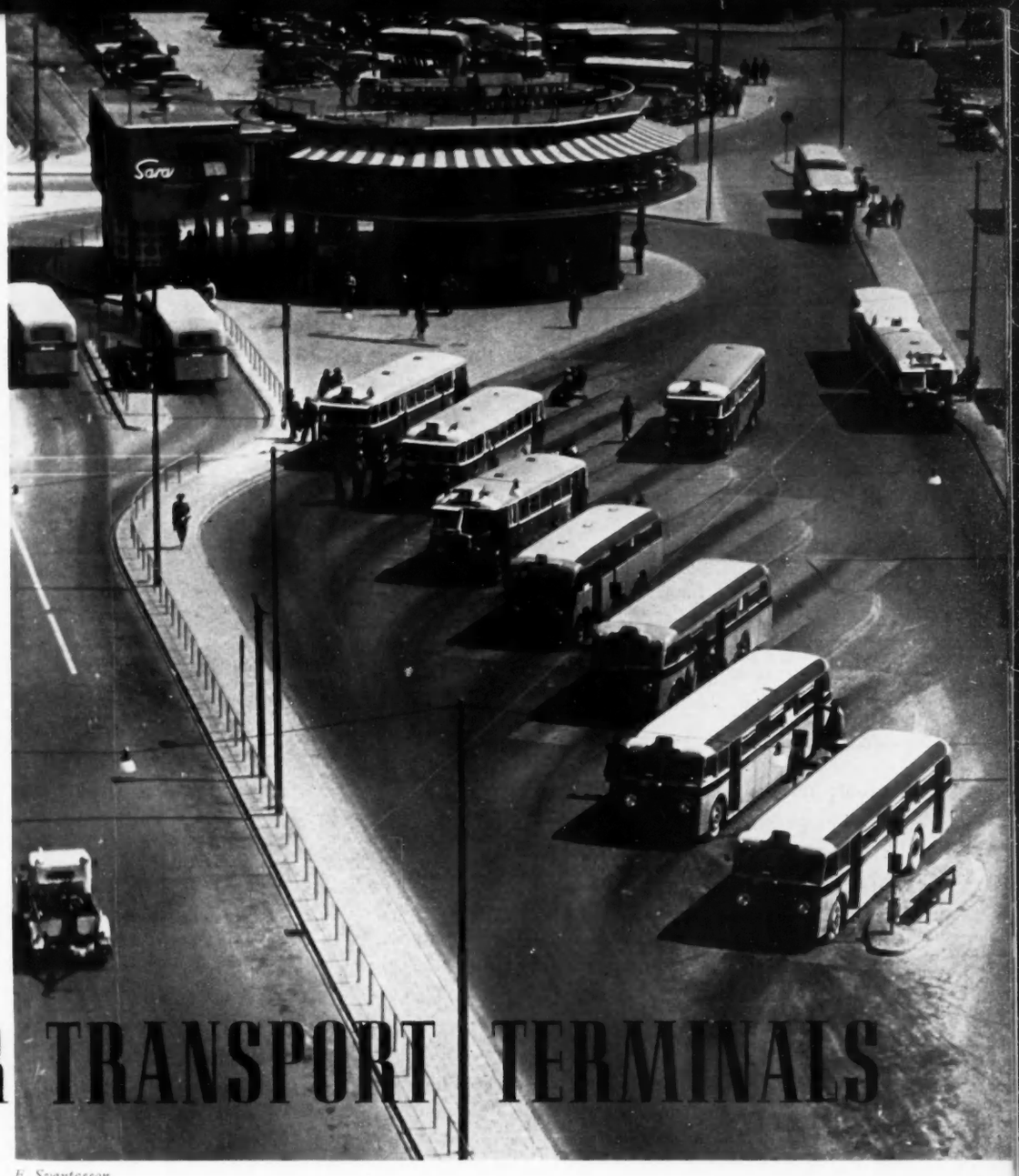
Photos by George D. Haight

HOUSE IN CALIFORNIA



ARCHITECT'S OWN HOME AT PASADENA, CALIF. WALTER L. REICHARDT, ARCHITECT. In this house, privacy and provision for outdoor living were primary requisites. High bedroom windows and the corner living room windows shield the view of passers-by. Placement of the garage gave form to an outdoor living room. A fence on the street side, a covered access porch at the rear and the glazed wall of the main house itself complete the four walls of this "room." The compact planning of the minimum hall space deserves more than passing study.

LIVING and DINING areas are combined and look out through tall windows on the enclosed patio



STOCKHOLM BUS STATION, with restaurant, ticket office, lounges, police station. HOLGER BLOM, Architect

MOTOR TRANSPORT TERMINALS

F. Svantesson

BUSSES, TRUCKS AND ARCHITECTURE

By JOHN S. WORLEY, Professor of Transportation Engineering, University of Michigan

There is much to be said about the effect of the internal combustion engine upon our culture, and, more narrowly, our architecture. Specifically, how has mass transport of people and goods affected us?

A BUILDING TYPES STUDY

TERMINALS for mass transport are not in themselves a new phenomenon, but our inventions, our teachings, religions, politics, ideologies, fanaticisms impose new requirements upon the problem of designing them. Apply invention of the gasoline motor to transportation of passengers en masse. One result is highway congestion. Another is, in essence, a revival of the eighteenth-century post-house—but with a difference. Today the multitude of passengers complicates the problem, and for the inn-yard we substitute loading docks; for the stable, a garage; and the very ease with which the poorest among us can get from place to place conspires to compress feverish activity into smaller and smaller confines. South of the Ohio River, custom at present demands separate facilities for different races. The only palliative the politician can find for traffic congestion is an edict ruling busses off the streets.

Similarly, truck transport is not in itself new. The trucks which use our highways are doing what Pizarro's gold trains did, but they do it for everybody.

However, terminals for receiving and transshipping trucked merchandise have been slow in developing. Without exact parallel in history, relegated to secondary

importance in the minds of the pseudo-cultured—perhaps because freight demands less flash and more efficiency in handling than do human beings—the motor freight terminal has only recently become architecturally important.

Neither bus nor motor freight travel has been publicly discussed as have the effects of the private automobile. Poor as our provisions for the private car have been, they are far in advance of public provisions for motor transport. Since the automobile came on the scene, we have seen garden cities rise, housers learn to exclude traffic from living areas, and home owners attach garages to houses.

But for motor truck transport what do we do? We not only turn our backs on it when we can; we route it in any way expedient to ourselves; or we allow it to mingle with private traffic to become a source of mutual exasperation. And so we place in the laps of the terminal designer, the operator, the city planner and the politician another set of howling problem-children.

Remedies for the larger evils of motor transport traffic are outside the scope of this study, yet the conditions which cause them are part of every terminal designer's problem. When bus travel first became important, the bus had no terminal; the sidewalk was its depot. There early became apparent a need for more formal accommodations, and drug stores, pool rooms, or other convenient places made arrangements to serve as "official" loading stations. Through several intermediate steps, our present depots and terminals—buildings specifically designed for the purpose—have evolved.

These are provided with ticket offices, information bureaus, news stands, restaurants, rest rooms, emergency hospitals, company offices and other facilities. In some instances large hotel accommodations are integral parts of depots or terminals, an outstanding example being the Pickwick Hotel, which is a part of the bus terminal at Kansas City, Missouri. Bus depots are numerous, and range in cost from $50,000 for a town of 30,000 population to $5,000,000 or $6,000,000 for a city of 500,000. The range of types may be gathered from the only recent book on the subject.* In addition to depots, the motor bus requires garages, repair shops and other structures.

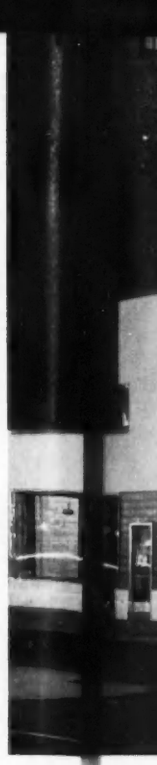
Motor truck and trailer transportation followed a course similar to that of bus companies. For early operations they had no terminals. The necessity for recognized places where small lots of freight could be received and delivered led them to lease or purchase whatever room, warehouse, or building might be available. Their entrance into the commercial hauling field came in the last days of the interurban railway, and in many instances they were subsidiaries of interurban companies. Hence they often used interurban terminals. As their operations have become more extensive, interchange of freight at common points has become desirable, and new motor truck terminals have been constructed. However, as a rule it can be said that their terminals are remodeled structures originally erected for some other purpose. Without doubt the future will see considerable building of new ones. The motor truck, like the motor bus, requires extensive garages and repair shops.

* *Modern Bus Terminals and Post Houses*, University Lithoprinters, Ypsilanti, Mich. Manferd Burleigh, President, Central Greyhound Lines, and Charles M. Adams, co-authors.

Drawing by William E. Haible

IN ARCHITECTURAL DESIGN there are always two dominant considerations: utility and aesthetics. Of the two, in transport terminals, at least, utility controls. However, the "institutional" character of a chain of bus or truck terminals can be capitalized upon; appearance and reappearance of a well-designed terminal motif along a company's route cannot help but impress that company on the public mind.

And in so doing, a bus station or a truck depot—and through them, the architects who design them—can contribute immeasurably to the advancement of our civilization. For the inventions so characteristic of our times are not accurate measures of our progress. Rather, the ability to make inventions submit to our needs, to control traffic, not let it control us, is a true index. And to achieve even a reasonable degree of advancement we must, in daily life, become so familiar with technical progress in all its manifestations that we no longer fear it. Only then can we plan intelligently.



Bus Terminal, New Orleans, La. DIBBOLL, BOETTNER & KESSELS, Archts.

BUS TERMINAL DESIGN AND CONSTRUCTION

By HARRY S. PACK, Industrial Designer and Consultant on Bus Terminal Design

ANALYSIS of about 70 terminals the author has surveyed, consulted on, or designed, indicates that: 1, few fixed relationships exist between elements; 2, fixed percentages of areas cannot be allotted for specific functions; 3, *each project must be designed for its own situation*. Economic and operational design factors include type, size and geographic location of the city; location of the site in the city; and type of operation—main line, feeder line, rest stop, meal stop, or "pickup" point.

CITY'S EFFECT ON DESIGN

In larger cities bus traffic alone may bring in sufficient revenue to maintain the terminal. Hence concessions (except restaurants) become less important, design can be more "free." In small cities (2,000 to 20,000) the revenue problem becomes critical; bus ticket sales alone cannot support a terminal. And when—a current happening—local legislators do not permit drug stores, restaurants or hotels to act as bus "stations" or pickup points, the operator is forced to consider the small terminal seriously. The architect is called upon to design a small terminal that can produce considerably more revenue than can ticket sales alone.

Determination of size of terminals is the most difficult phase of design. Most terminals built several years ago are too small today. This results from more rapid expansion of intercity traffic during the 1930's than was anticipated. Growth during the next decade may not be the same. During the last five or six years business has increased 10 to 15 per cent per year. Under normal conditions expansion might well continue at the same rate, but no one yet knows how the national defense program will affect bus travel. There is already a shortage of new rolling stock. Add to these considerations the facts that a terminal must provide facilities adequate for a 10- to 20-year period, that unnecessary fixed charges must be avoided, and that individual routes have traced instantaneous passenger increases of 10 to 13 per cent directly to erection of terminal facilities, and a situation arises which calls for careful judgment in determining the size of terminal for *each* location.

Site. The writer feels that a site convenient to, but not on, a main street has definite advantages. First costs and taxes can be reduced. There should be no decrease in business; locations "just around the corner" should make little difference to city patrons. Value of some concessions, particularly restaurants, conceivably could be enhanced by the opportunity to invite a better class of patronage to roomier quarters. Reduction of traffic congestion would speed schedules and improve relations between autoists and bus operators.

Building plan and appearance. In smaller cities working areas should be kept to a minimum in order to make available a maximum of space for concessions. Work areas should be planned for expansion, by removing minor walls or by additions. In several very small cities, gas stations have been successfully combined with terminals. The need for attracting patrons to concessions by good appearance cannot be too highly stressed.

The building as a whole must be adequate for peak loads at rush hours, weekends and holidays. These loads can be determined by checking existing and potential schedules with the operator.

TERMINAL DESIGN

Plot plans are of several types, most common being the *island* and the *parallel* or through type. Islands

usually accommodate more busses, but in actual use both are of almost equal importance. Islands are suitable for almost square plots (corner or center of block); narrow plots, particularly inside lots, usually call for parallel arrangement.

Building appearance depends on many factors: cost, locality, designer's preference, and, most important, desire to conform to an "institutional" style peculiar to the operator. The terminal, an important building, should enhance its neighborhood—unfortunately some do not, often because the designer goes to extremes to achieve modernism.

Structure. Generally speaking, buildings are "fireproof"; reinforced concrete is used at least for passenger concourse, sidewalks, ramps and driveways. Materials for remainder of structure usually depend on local availability, labor costs, etc. Materials for exterior finish include stone, structural glass, glass block, terra cotta, concrete, stucco, stainless metals, porcelain enamel, and glazed, painted or natural brick.

Interior structure and finish must be practical and easy to maintain. Floors in medium and large-sized buildings are generally terrazzo; smaller buildings have cement-surfaced slab floors. Occasionally the latter are covered with asphalt tile, linoleum or rubber. Partitions are usually plaster over hollow tile, except that in some small terminals wood studs and plaster are used. Wainscots vary from plain painted plaster to cement plaster, glazed or unglazed tile, linoleum, painted burlap, and a number of other materials. Ceilings usually are of plain plaster finish but occasionally are "soundproofed"—a practice which has much to recommend it.

Lighting is often provided by inexpensive fluorescent fixtures applied to or hung from the ceiling. Some fairly recent buildings have flush lighting. In many buildings areas of glass block in exterior walls permit increased daylighting and night display effects.

Heating systems of a number of types are used: automatically controlled steam heat, automatic forced air (in conjunction with air conditioning system in some instances), direct radiation, gas unit heaters and suspended gas blower heaters. Later, larger terminals are air conditioned.

AREAS REQUIRED*

Waiting rooms are usually from 20 to 35 per cent of total building area—the smaller the terminal, the higher the percentage. In Southern terminals, separate accommodations are needed for negroes.

Rest rooms have to be adequate for peak passenger loads. No formulae have been established. Practice is to provide as many fixtures as space permits. All water closets but one each for men and women are ordinarily pay units. Some states require ladies' lounge.

Dining facilities average from 15 to 25 per cent of building area. Larger buildings need more dining space. Sandwich bar is minimum provision; booths are preferred by customers, tables more flexible to lay out. Kitchen and kitchen storage space are needed.

Ticket office has to be accessible to all waiting room space. In medium to large-sized terminals, a small manager's office, in which agents can "check out," is needed.

Baggage room is adequate in only a few existing terminals. Size is indicated in Time-Saver Standards. Additional storage space in basement is desirable.

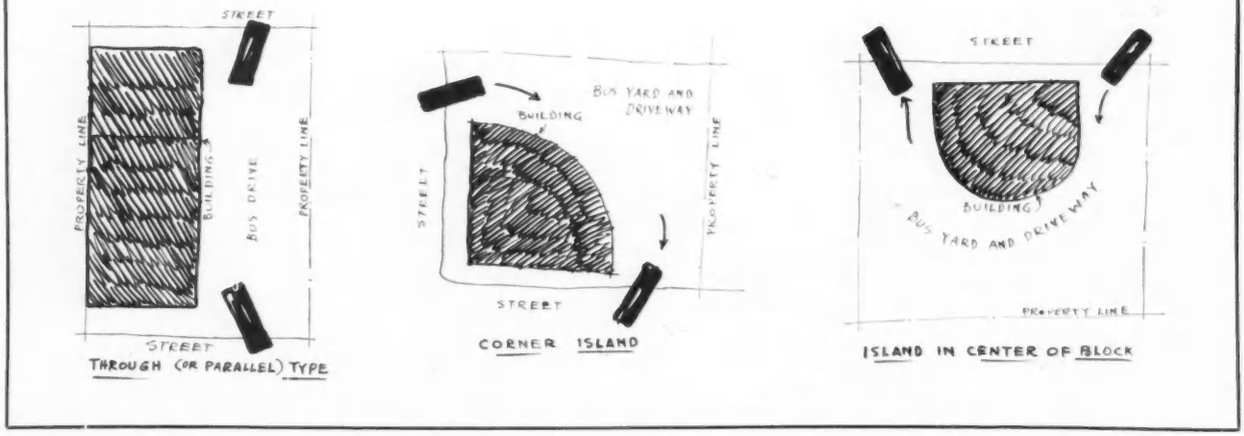
Dispatcher's office is required except in smallest depots, consists of small booth located so dispatcher can see all bus loading stations.

Administrative offices are needed in large terminals for proper operation of terminal; and for divisional or company offices. Facilities include executive, auditing, secretarial and general offices.

Concessions may cause success or failure of a terminal. Depending on locality, the following may be included (those mentioned first are most common): Restaurant, fountain, travel bureau, news stand, telegraph office, shoe shine, barber shop, shower booths, beauty shop, retail shops, drug store, etc.

Bus drives, loading platforms, ramps, etc., are discussed in Time-Saver Standards.

*Specific data are given in Time-Saver Standards, page 97 et seq.



TYPES OF PLOT LAYOUTS: "Parallel" plot plan is not to be confused with "parallel" loading dock (see page 99). Sawtooth loading is used with all plot layouts; parallel loading is so used also, but to less extent

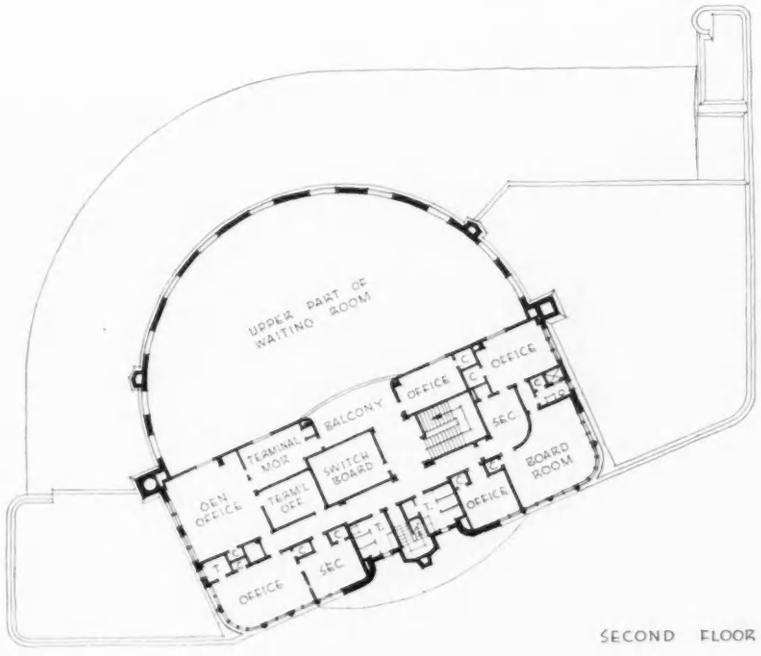
LARGE TERMINAL WITH PAYING CONCESSIONS

GREYHOUND TERMINAL, WASHINGTON, D. C. WISCHMEYER, ARRASMITH & ELSWICK, ARCHITECTS. This terminal, an island type completed in 1939, cost $290,000. The entire structure, including bus drives, is reinforced concrete; building is faced with limestone and terra cotta on the street front, with glazed brick on rear walls. Ceilings are acoustic plaster; interior walls, colored plaster with sheet plastic wainscots; floors, terrazzo. Heating is at present forced air supplemented by direct radiation. An air conditioning system has been provided for future use.

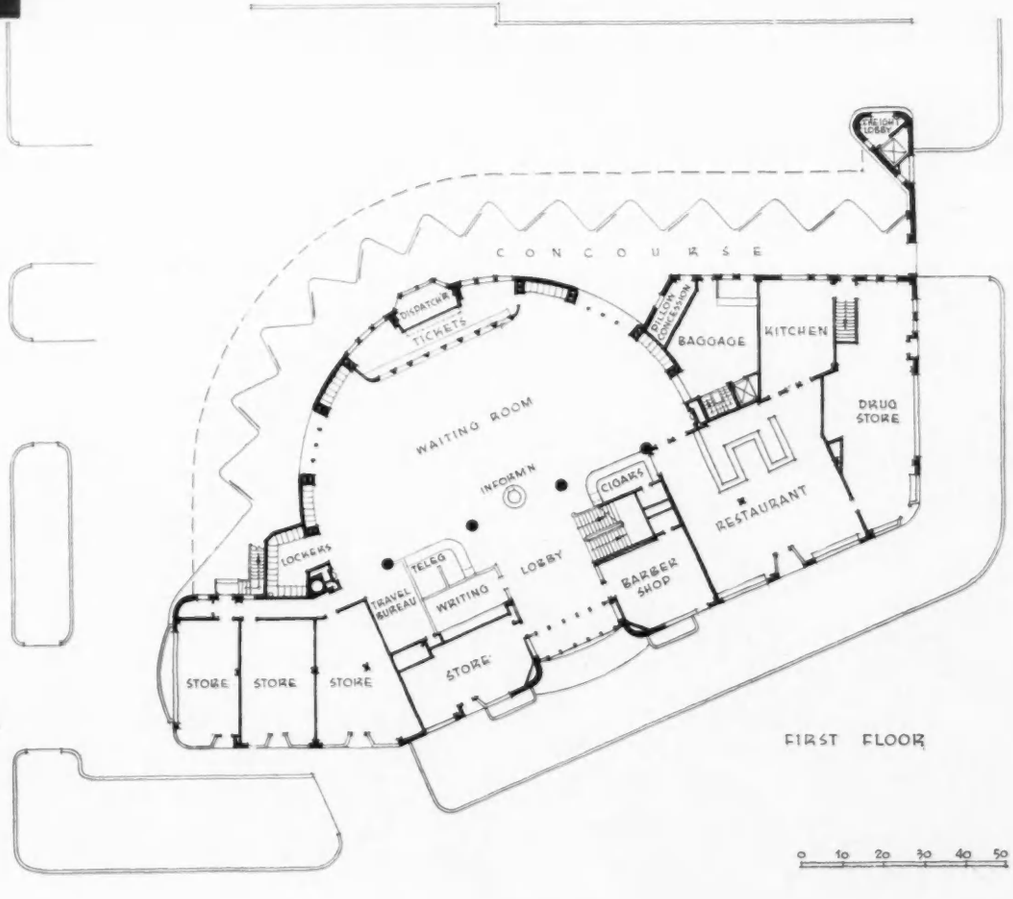
Noteworthy in the plan of this large terminal (see over page) is the number of concessions, ranging from news stands, restaurant and barber shop to four retail shops and a drug store. Drivers' quarters, public toilets, storage space and mechanical equipment are in the basement, terminal facilities and concessions on the first floor, offices for several bus systems on the second.

In photo of loading dock, below, note combination of lally columns and cantilever which supports the canopy. Canopy roof is a reinforced concrete slab, approximately 4 in. thick, 27 ft. wide, 200 ft. long. Columns are some 15 ft. from the building, leaving a cantilever of about 12 ft.

Leet Brothers



SECOND FLOOR



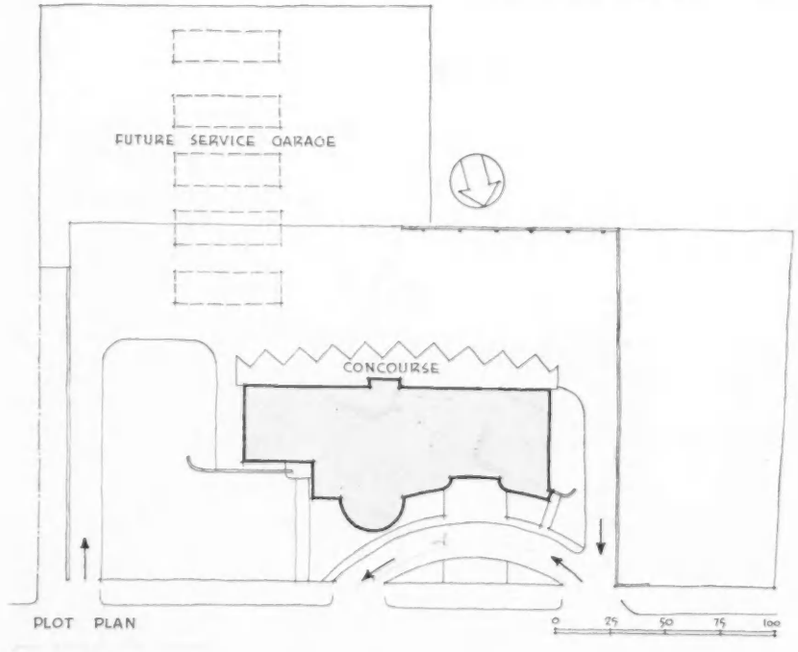
FIRST FLOOR

APPROXIMATE AREAS

Waiting room,	3,300 sq. ft. (180 seats)
Ticket office,	550 sq. ft.
Baggage room,	600 sq. ft. (additional lockers, also space below)
Restaurant,	2,200 sq. ft. (34 seats)
Kitchen,	400 sq. ft. (storage below)
Travel bureau,	270 sq. ft.
News stand,	140 sq. ft.
Barber shop,	240 sq. ft.
Drug store,	1,000 sq. ft.
Shops (total)	2,080 sq. ft.

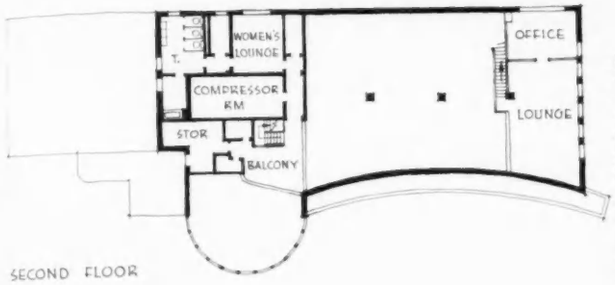
Photos by M. L. Pruitt

SOUTHERN TERMINAL PROVIDES

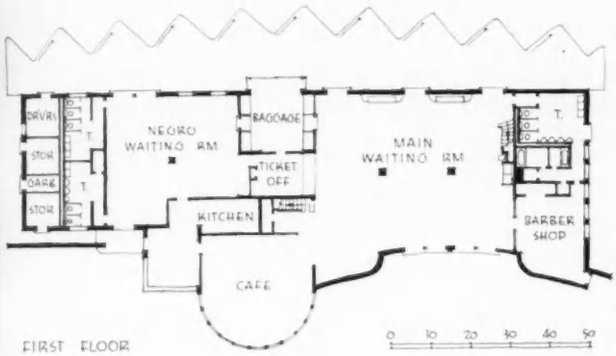


TRI-STATE TRAILWAYS TERMINAL, JACKSON, MISS. R. W. NAEF, ARCHITECT and ENGINEER. Completed late in 1940, this terminal cost approximately $125,000, and contains typical areas required in a moderately large Southern terminal. Note in plan the location of a service block—baggage room, ticket office and café—between the two waiting rooms. Also, in the front of the plot, space for travelers' cars is provided—an amenity not always considered, yet one which must contribute greatly to passengers' comfort and convenience. Concessions are limited to a barber shop, café, and a news stand next to the café.

Part of the terminal was built over



SECOND FLOOR



FIRST FLOOR

PARKING SPACE

a deep gully. Only a portion of this was filled; the greater part is supported on reinforced concrete beams and columns, with planting spaces built into the concrete slab. Construction of the building is of brick and steel generally, with cast stone, concrete, and stucco trim. Restaurant bay is built of decorative structural pipe columns to which steel sash are secured directly. The building is air conditioned.

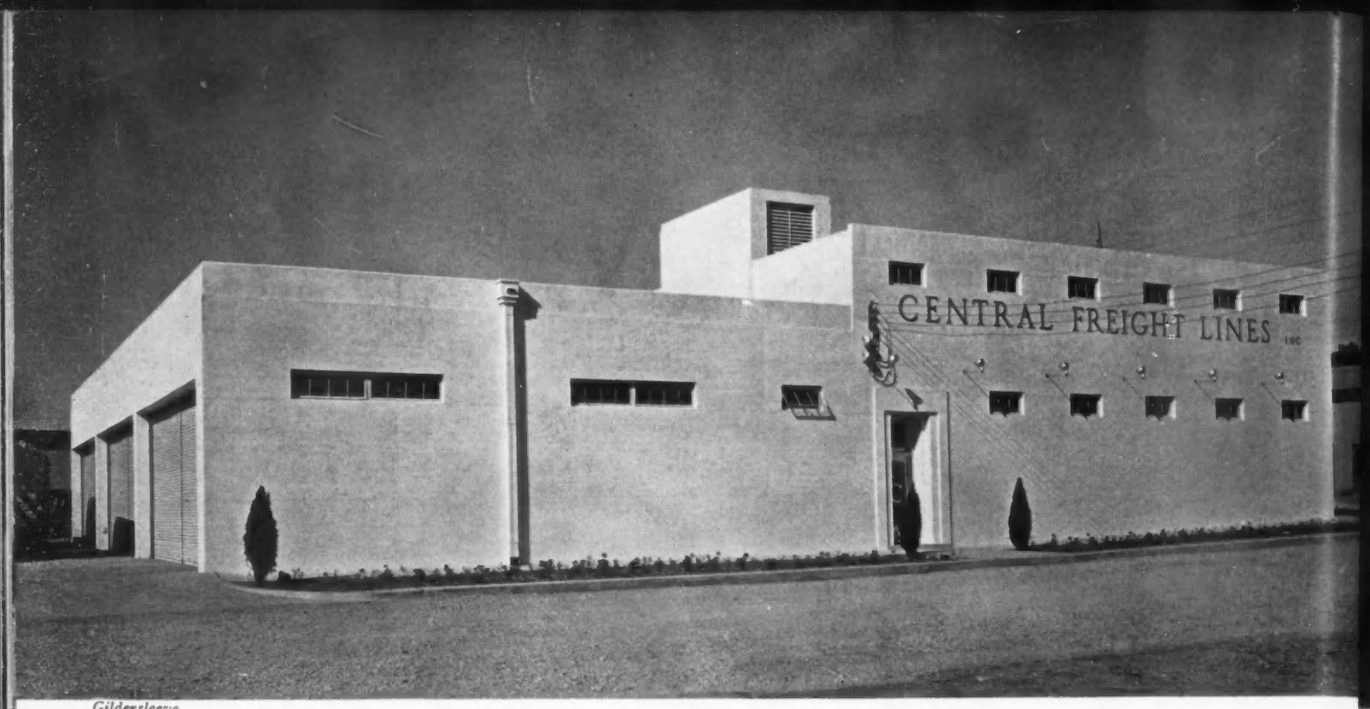
The concourse is slightly radial, which eases the bus driver's job. Such small refinements as the combination of the pipe rail bumpers at loading docks with the lally columns which support the canopy, are also noteworthy.

CONCOURSE, LOADING DOCKS

MAIN WAITING ROOM

NEGRO WAITING ROOM

CAFÉ



Gildersleeve

TRUCK TERMINALS BENEFIT FROM LOGICAL PLANNING

By FRANK G. LOPEZ JR., **Associate Editor of ARCHITECTURAL RECORD, as reported by W. W. CALLAN, President, Central Freight Lines, Inc., Waco, Texas; and by ROBERT P. WOLTZ, JR., AIA**

ESSENTIALLY, a motor freight terminal is a depot for transshipping freight. It may be a central station where great quantities of goods are transferred from railroads to truck lines, or from long distance to local systems; or it may be a small way station where freight from the main line is picked up by local distributors. Sometimes these functions are combined. Depending on its type, facilities for drivers, for transacting business, for storing and repairing trucks, may be needed in varying amounts.

SITE

Location should provide the truck operator with an address on a well-known street, in or on the outskirts of a wholesale or manufacturing district, reasonably near the center of the city served. An exception to this requirement is the small local station, where the main highway may run through the edge of town. In all cases, convenience to main commercial traffic arteries is paramount. The terminal should have at least two means of entrance and egress in order to eliminate delays. Within the terminal's facilities should be included a railroad siding. The terminal grounds should be entirely surrounded by a high fence, topped with barbed wire. Area for future expansion should always be considered when obtaining the initial site.

AREAS REQUIRED

Loading docks. If a building is a terminus of a line, where both road trucks and pick-up and delivery trucks are accommodated, loading docks are desirable on both sides of the building for rapid freight handling. If the building is an intermediate point, where road trucks, though not regularly stationed, pause en route to pick up and deliver local freight, only one set of loading docks is needed. A safe rule for large terminals is to allow one loading door for each 15,000 lbs. of freight handled daily. Allow 12 linear ft. per truck space. For freight docks with loading doors on both sides a width of 50 ft. is usually adequate. Another method of determining space is to allow 250 to 300 sq. ft. per truck load.

Warehousing. A storage warehouse is not essential; however, temporary storage space is needed because not all shipments can be delivered immediately, and it is advisable to remove such freight from the busy transfer platform between loading docks. Warehouse docks can be small, to accommodate one truckload at a time. A 10-ft. ceiling is satisfactory for handling and stacking goods.

Garages, while not essential for all types of depots, are required at terminals. Shops, equipment and storage space for spare parts are usually needed for repairs, chiefly mechanical, even though complete overhauling is done elsewhere. These should be included within the same fence as the terminal building, but are often separate buildings.

Drivers' accommodations are needed wherever drivers remain during rest periods, day or night. Dormitory, toilet, shower and locker rooms are needed. Recreation room is required when drivers, off duty, are likely to have to remain at the terminal, and must be provided with other facilities than busy working areas. It is desirable to segregate all these accommodations from office work and

Gildersleeve

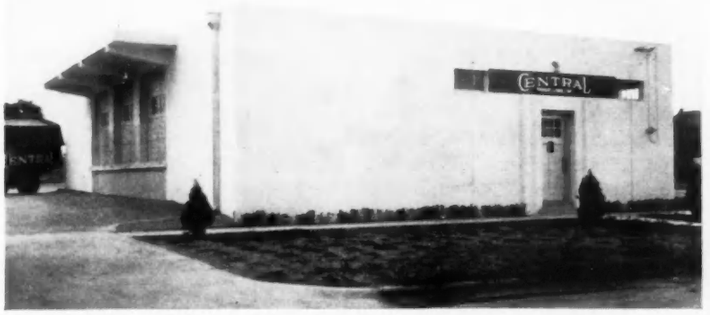
Garage and Office Building (opposite) and Freight Depot, Central Freight Lines, Inc., Waco, Texas. HARRY SPICER, BROOKS PEARSON, Architects. Parking area separates the buildings. Fire wall between garage and offices reduces insurance rates. Drivers' quarters and café are behind large windows above

terminal operations. This is particularly true of sleeping rooms, where windows may be located away from excessively noisy traffic, and where toilets, etc., may be placed partially to block off noise.

Dispatcher's office must permit direct supervision of loading docks, and be connected to business and manager's offices. A liberal amount of glass between dispatcher and dock, with sills no higher than desk level, is satisfactory.

Other offices. Allow from 100 to 150 sq. ft. per employee. If the terminal has at least ten employees, the manager needs a private office, and should have an unobstructed view of freight dock and yard. This office should be so located that any employee can see and talk to the manager without inconvenience. Clerical space is needed for rating, billing and filing, and should be designed to permit expansion. An office may be provided for other firms' salesmen who wish to use the terminal's business facilities.

(*Continued on page 92*)



40- by 60-ft. depot, Taylor, Texas. SPICER & WOLTZ, Architects

30- by 60-ft depot, Cleburne, Texas. ROBERT P. WOLTZ, JR., Architect

Smith

TRUCK TERMINAL PLANNING **(continued)**

PLANNING AND CONSTRUCTION

Most important are loading doors and dispatcher's office. The manager's office is best located so as to control closely all portions and operations of the terminal. Dispatcher's office should not be accessible to the public; public space should lie between street and business offices, and should be segregated from trucking activity. Drivers' quarters can be on a second floor, over the business offices.

Construction materials used vary according to local availability and cost. It should be remembered that usage will be hard, and that the average minimum life of a terminal building is 10 to 20 years. If the dock is not placed on solid fill, floor supports have to be adequate to carry heavy loads. Floors should withstand traffic and abrasion, and be easily cleaned. Warehouse and dock column spacings should be as great as is economically possible; 20-ft. bays in both directions are in common use. In warehouses, a row of columns may be spaced 10 ft. from a wall. These dimensions simplify aisle layouts and stacking of freight, and suit most occupants, who work in hundreds of square feet. If the warehouse is to be bonded, fireproof construction is required.

EQUIPMENT

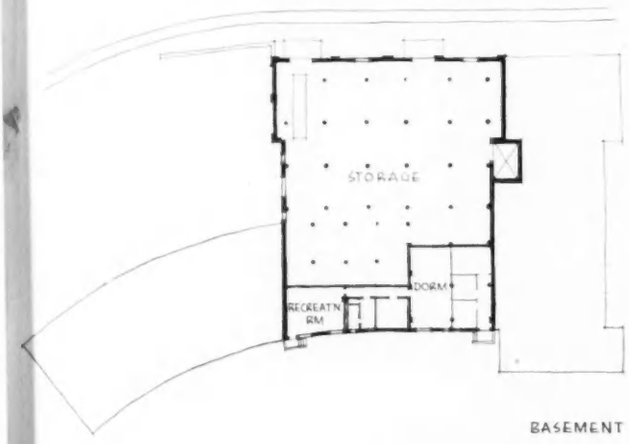
Motor freight employees have necessarily irregular hours. Their work is found more efficient if winter heating is supplemented by at least a summer cooling system. Also, much of the repetitious office work requires accuracy, and good lighting is needed. Walls and ceiling painted in highly reflective tints are desirable, and fluorescent lighting has been found to reduce current consumption and provide increased usable light. Plumbing fixtures and piping are selected for durability, in numbers according to public building standards, codes, and space available. Where winters are extreme, plumbing systems have to be insulated because freight docks stay open regardless of weather.

From the dispatcher's office communication is needed with the freight platform, via loudspeaker. It should also be possible to call from the platform to the office, subject, however, to the dispatcher's control. The dispatcher has also to be able to call drivers in their quarters, and to call the garage for equipment.

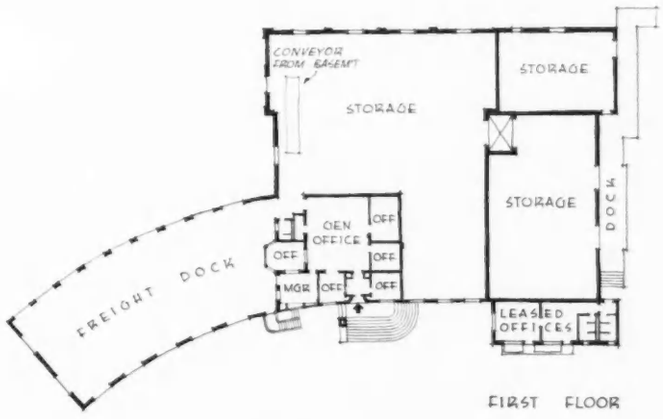
Automatic scales used on the freight platform are preferably countersunk level with the floor. Belt conveyors have proved desirable particularly when freight is handled on different levels.

Smith

TERMINAL AND WAREHOUSE ON TWO LEVELS



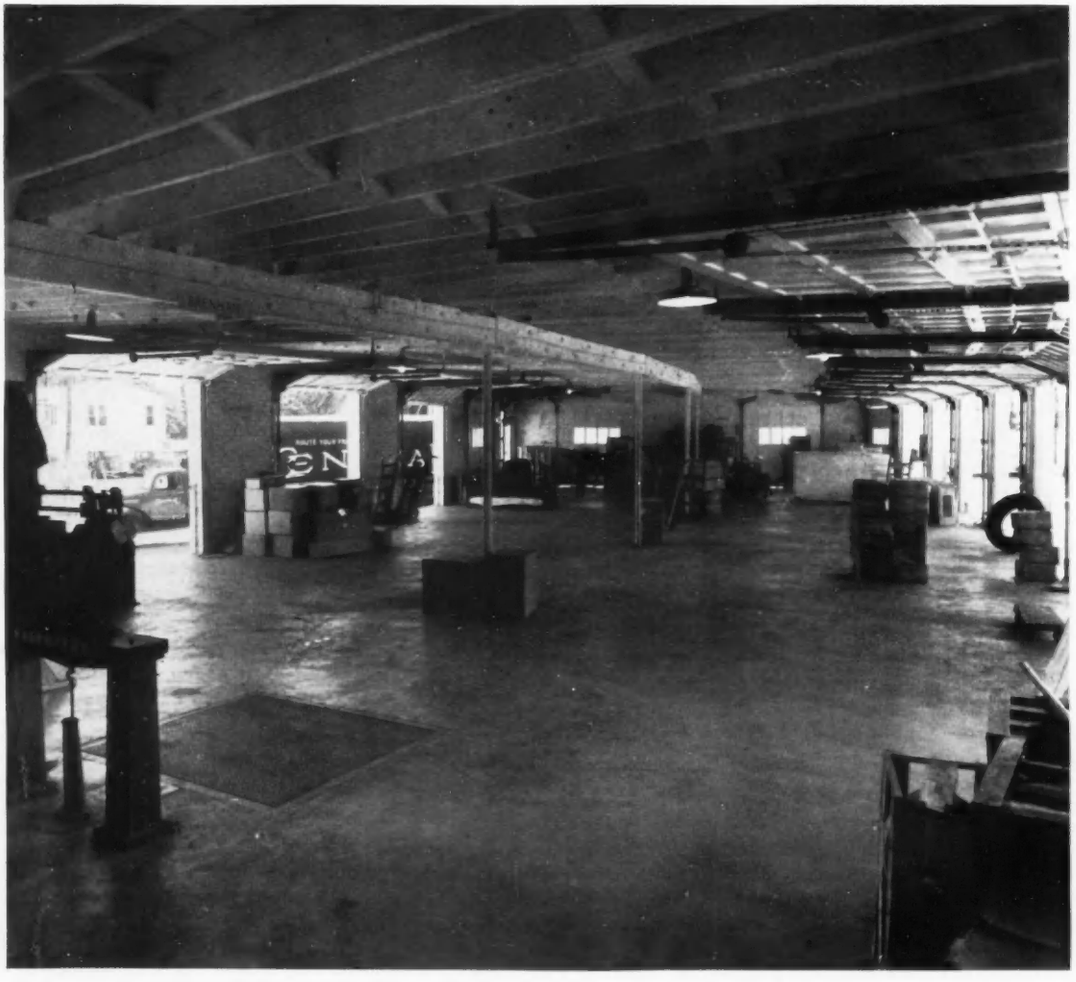
BASEMENT



FIRST FLOOR

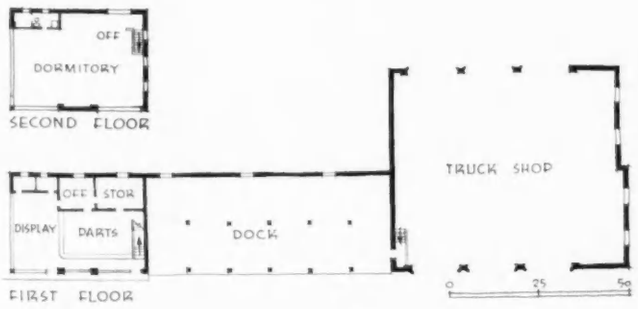
CENTRAL FREIGHT LINES, INC. AND CENTRAL FORWARDING, INC., FORT WORTH, TEXAS. ROBERT P. WOLTZ, JR., ARCHITECT. By remodeling an ice house and demolishing another structure, it was possible to achieve a plan with trucking facilities at one level, railroad at another. Use of conveyors and an elevator for handling freight from car to warehouse or trucks has helped in securing business. The tall portion is a warehouse.

General office, shown above, is easily supervised from manager's office in corner. Adjoining is an alcove-office for clients' salesmen, etc. Loading dock, below, has 50-ft.-wide concrete floor in which scale platform is countersunk



Murwin Mosler

"ONE-STOP" SERVICE FOR TRUCKS



Thomas Korn

GARAGE UNIT

TRUCK TERMINAL, JOPLIN, MISSOURI. ROBERT J. BRAECKEL, ARCHITECT. Designed to provide service for numerous individual truck owners as well as fleets, this structure houses many activities: sales of new trucks, parts, accessories, tires; pick-up and delivery of local shipments; dispatching and communication via telephone, telegraph, teletype; and truck repairs and servicing ranging from gas and oil to use of a wrecker and parking space.

An important part of the problem was provision of flexible, accessible facilities without interfering with local traffic. From several points of view the site is well chosen: it is just within the main business district of Joplin; is accessible from three streets, of which one is U. S. Highway 66 and another leads by viaduct to by-pass truck routes; and a number of shacks had to be demolished to make room for the building.

New truck displays are now parked outside the office block. In the short time since the building was completed, its use has been so intensive that expansion to the west is now considered. Construction is brick and steel generally, and floors are concrete, except for loading dock. Complete "fireproof" construction was considered unnecessary since attendants are on duty 24 hours a day.

BECAUSE INDIVIDUAL truck owners are important in the business volume, and drivers are responsible, free access is afforded them to all parts of the three units: office and sales, dock, and garage. The management supervises dispatching, loading and unloading, and collections. An intercommunicating loudspeaker system is installed.

First floor of office unit has glazed tile walls, plastered ceiling, tile floor over concrete. Heat is supplied by gas-fired suspended units. Drivers' quarters and offices on second floor have wood floors, plaster walls. The structures cost approximately $60,000.

OFFICES, SALES, and DRIVERS' QUARTERS

OFFICE: glazed walls facilitate supervision of yard

DOCK, permanently open, faces away from storms

GARAGE: door openings are 15 by 14 feet

BUNK ROOM in drivers' quarters

Photos by Thomas Korn and Murvin Mosier

BUS TERMINAL DESIGN

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
OCTOBER, 1941

Information on this sheet was prepared by Ronald Allwork from data furnished principally by W. S. Arrasmith of Wischmeyer, Arrasmith and Elswick, Architects. Harry S. Pack, Industrial Designer; Greyhound Bus Lines; and *Bus Transportation* also furnished data. See also T-S. S. *"Bus Terminals—Loading Docks and Concourse."*

Plot layout. Plan and arrangement are governed by placement of bus lanes and loading platform. A square lot (most desirable) permits efficient and economical concourse layout, provides for loading busses on two or three sides of waiting room, makes approach to all busses approximately the same. An alternate scheme provides loading on two opposite sides only. Both plans are known as *"islands."* Narrow, deep lots necessitate stretching elements into a *"parallel"* plan, in which busses are loaded from one side of the building only. Increased distance between elements makes this type less efficient.

Bus facilities. Except where bus traffic parallels both sides of a building that extends through from street to street, one bus entrance and one exit are normally sufficient. Their width depends on width of street and bus turning radius; 14 ft. is minimum, 16 to 18 ft. preferred. Bus movement should be clockwise, since passenger loading door is on right side of bus.

PASSENGER REQUIREMENTS

Street entrances should be 2 to 6 doors wide. Entrances should be centrally located; from them the elements of the terminal radiate.

Waiting room should be directly accessible from street. Access to concourse should be through multiple doorways or "gates," so located as to distribute passenger traffic uniformly, without congestion even during peak load periods. Seating may be based on approximately 1/3 passenger capacity of loading docks, assuming 35 to 37 persons per bus. Space allowances range from 15 to 35 sq. ft. per person; 20 to 24 sq. ft. is considered satisfactory. Total area averages 20 to 35 per cent of total building area; the smaller the building the larger the percentage. Eight-place settees, with or without separation arms, are commonly used. Drinking fountains, trash baskets and ash receptacles are also needed.

Baggage room should be accessible from both waiting room and concourse. Outside freight has to be delivered without interfering with concourse traffic. Baggage is usually checked over counter from waiting room and trucked to busses, and vice versa. Area of baggage room should be 10 per cent of total building area or contain 50 sq. ft. for each bus loading dock—whichever is the higher. Large storage space (usually in basement) is desirable for holdover and unclaimed baggage. Standard metal racks, one or two units deep and four to five shelves high, are suitable for baggage storage.

Check lockers are desirable in addition to the above facilities and are generally paying concessions. Number of lockers is based on potential earning capacity.

Toilets must be convenient to waiting room. Cement or terrazzo floors and bases are preferred. Wainscot should be 4½ to 5 ft. high. Number of fixtures depends on size of terminal, but as many as economically possible should be provided. Women's lounge should be large enough for a couch, vanity or dressing table, and several chairs. Men's lounge is not desirable.

Ticket office should be prominent in waiting room. In small stations proximity to concourse is desirable but is not essential in large terminals. 50 sq. ft. should be provided per selling position. One position may be provided for each 25 or 30 waiting room seats; but number of positions is usually based on personnel normally required and on anticipated extras for peak periods. It is not necessary that ticket office be connected to other offices. Counters should be 42 in. high; cages or windows are not desirable.

ADMINISTRATION AND CONCESSIONS

Dispatcher's office controls bus movement and should be on concourse at a point from which all loading docks can be supervised. It need not be related in plan to waiting room or ticket office, but is usually connected by telephone and telautograph to ticket office, manager's office and bus garage. Public address system is used to announce arrivals and departures of busses.

Offices for terminal manager, passenger agent and switchboard are usually sufficient. These need not contain more than 100 to 200 sq. ft. each. In larger terminals, offices for regional manager, clerical force, meeting rooms, etc., may be required.

Drivers' quarters are usualy limited to lounge and toilet facilities (with shower) in basement or on second floor, and require private entrance accessible from concourse. Space is needed for reading table, lounging chairs, shelves for tool kits. Sleeping quarters are usually provided at local bus garage, not in terminals.

Restaurant is usually necessary for all terminals, has floor area ranging from 15 to 25 per cent of building area; usually, the larger the terminal, the larger the percentage. Larger restaurants have counter and tables. Patrons prefer booths, tables are more flexible, so both are used. Counters generally receive bulk of business. Soda fountains should be included. In larger terminals, soda fountains may be installed in waiting rooms. Kitchen area is from 15 to 35 per cent of restaurant area, depending partly on storage facilities; these are often in basement.

News stand should be adjacent to waiting room and restaurant.

Telephone and telegraph booth is mandatory. In larger terminals a telephone operator is sometimes desirable.

Barber shop and stores are often included. Space economically available, anticipated demand, size of terminal, etc., have to be considered in allocating space for this type of concession. In small terminals some means of increasing revenue is essential; concessions may be the answer. Drug stores are sometimes included. Beauty parlors are seldom included at present.

Travel bureau is important, particularly in large terminals. It should be on or near street, adjacent to waiting room. A show window may be provided on street front.

SERVICES AND CONSTRUCTION

Air conditioning is widely used, especially in large terminals. In northern localities this is often supplemented by steam or hot water radiation.

Lighting in public spaces is often fluorescent, either direct or indirect, with

BUS TERMINAL DESIGN

a three-stage control to permit adjustment of light level to variable passenger traffic.

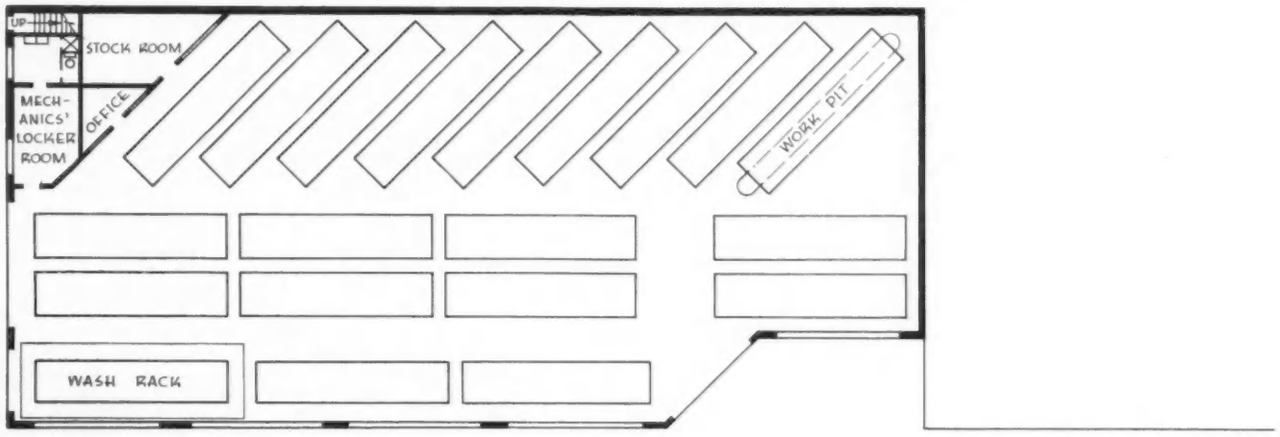
Intercommunicating system includes telephones and telautograph connecting dispatcher, ticket office, manager's office and bus garage. Cut-in on public address system is usually provided so switchboard operator can page individuals.

Construction should be "fireproof," and is ordinarily steel frame or reinforced concrete, depending on building design, availability of material, costs, etc. Partitions are usually tile or gypsum block, and should be planned for economical changes if required for expansion.

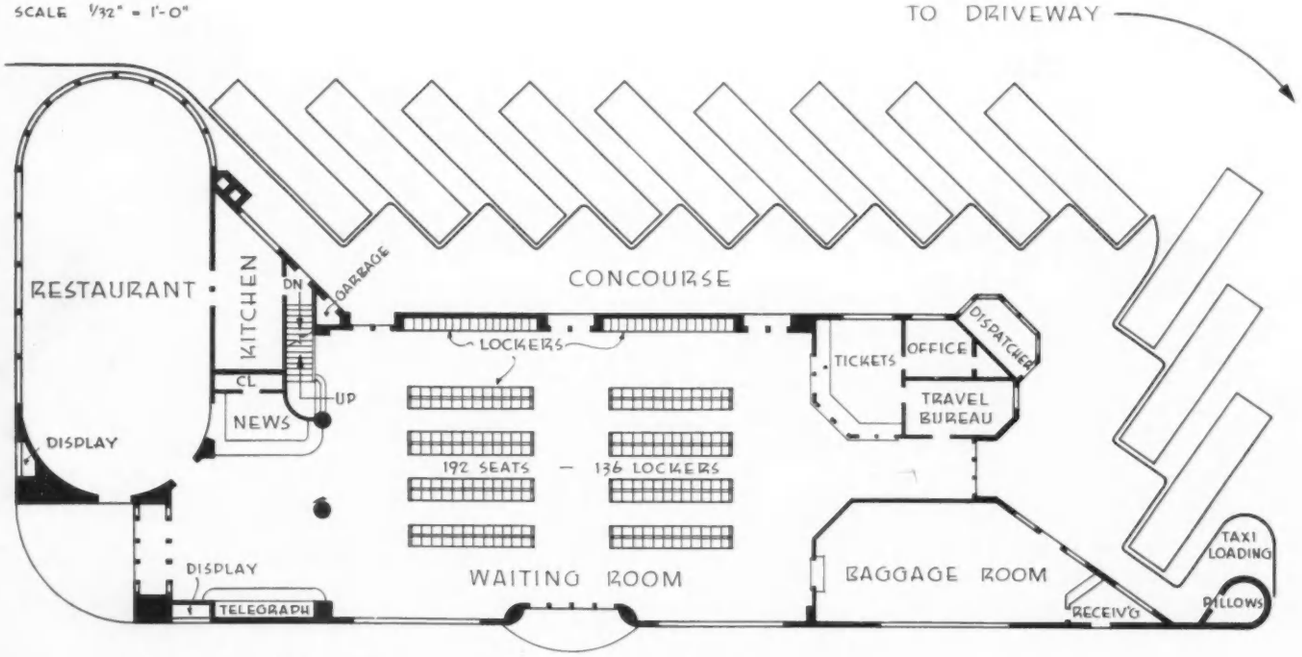
Interior finish, where subjected to public use, must be rugged and easy to maintain. Terrazzo or tile floors are usually employed; smaller buildings often use cement. Wainscoting in main areas should be able to take abuse. Ceilings in restaurants, waiting room and telephone office should be acoustically treated.

Exterior finish is often cut stone. Glass block is extensively used. Brick, terra cotta, stucco, and concrete are also used; and glazed brick is commonly employed for concourse wall and rear of building.

Concourse, bus lanes and yards are constructed of 7 or 8 in. thick concrete slabs, of 2,500 lb. concrete, reinforced top and bottom with No. 40 mesh. A surface hardener should be employed.



SCALE 1/32" = 1'-0"



PLAN, typical bus station, fairly large size. Wischmeyer, Arrasmith & Elswick, Architects. Note bus garage in rear

BUS TERMINAL DESIGN—Loading Docks and Concourse

ARCHITECTURAL RECORD TIME-SAVER STANDARDS

OCTOBER 1941

This sheet is intended to supplement T.-S.S. *"Bus Terminal Design,"* October 1941. Data were prepared by Ronald Allwork from information furnished by W. S. Arrasmith and by Harry S. Pack.

LOADING DOCKS

Parallel loading requires an excessive amount of space per bus. Usually busses in rear cannot move out until first bus exits. In a large terminal several lanes would be required, and overhead or underground passage would be necessary to several island loading platforms. Otherwise passengers would cross bus lanes, an extremely dangerous practice which creates a liability on the bus company.

Right-angle, or head-on, loading is acceptable, but disadvantages include the outswinging bus door which forms a barrier around which passengers must go, and difficulty of maneuvering each bus into its berth. This type of loading is useful when the bus yard is deep, but concourse is limited in extent.

Straight sawtooth loading is efficient, and is employed where lot is comparatively narrow and deep. Passenger has direct approach to loading door, baggage truck can operate between parked busses for loading into side baggage doors.

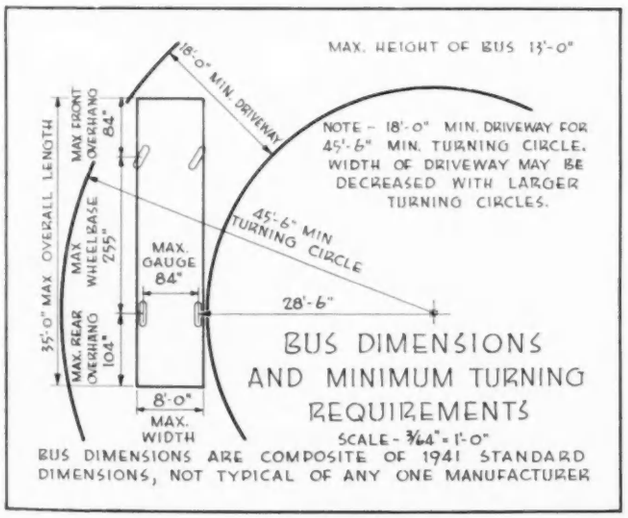
Radial sawtooth loading is most efficient. Busses may swing into position along a natural driving arc. A minimum of concourse frontage, per bus, is required. In this system each bus space is narrow at front and wide at rear, making maneuvering easy and conserving space.

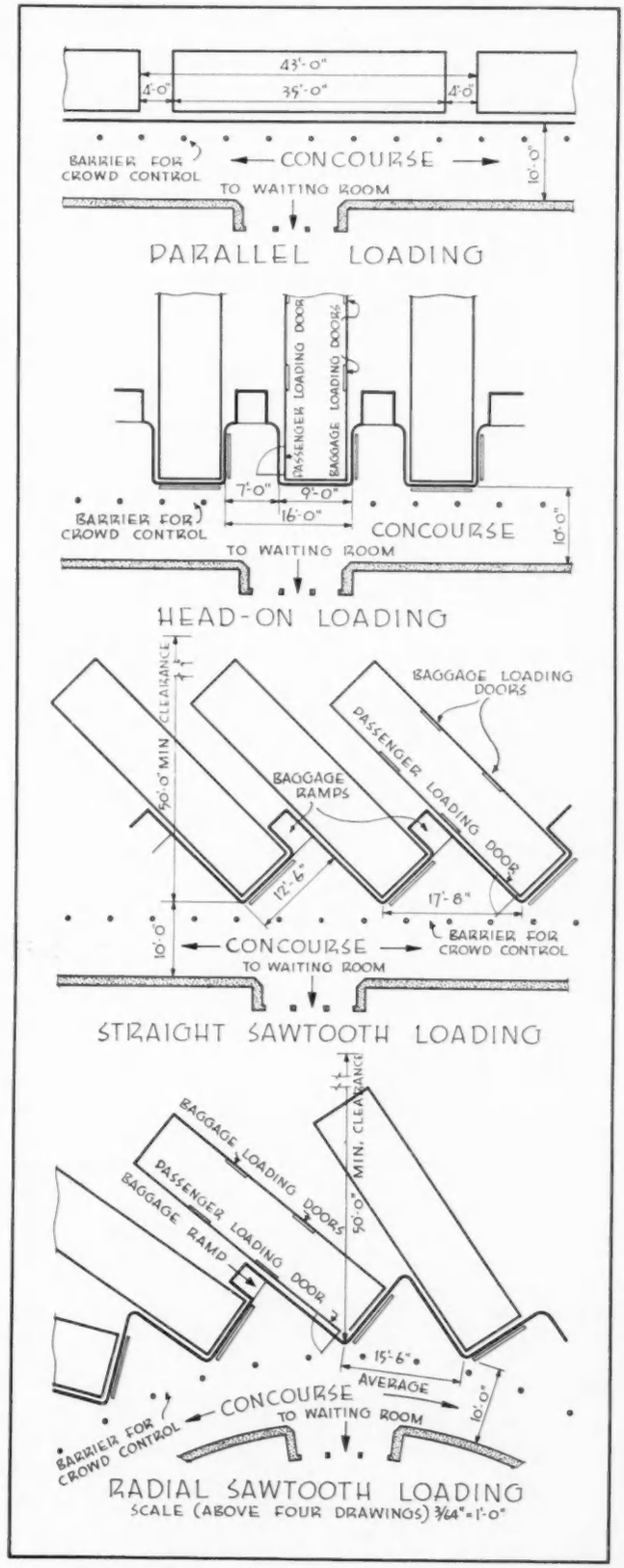
Number of loading docks is based on average peak loading conditions, size of lot, and size of structure. Abnormal peak conditions such as occur on holidays can be taken care of by "doubles"; that is, by parking additional busses in the lot and immediately running them into loading docks as scheduled busses depart. Limited dock space is not a serious drawback if ample parking space can be provided for "double" busses.

Passenger concourse is protected from weather by overhead canopy which cantilevers over passenger doors of busses in loading docks. This protects passenger getting on and off busses as well as front baggage doors on sides of each bus. Holiday crowds can be controlled by using airplane cord barriers as indicated in diagrams.

BUS YARD

Area depends on type of loading used and number of busses to be parked. Parallel loading requires approximately 12 ft. (width) per driveway; right-angle loading requires approximately 40 ft. from rear of bus to property line; sawtooth loading (straight or radial) requires about 50 ft. from front right wheel of bus to property line (assuming busses parked at 45°, berths 12 ft. 6 in. wide).


MAX. HEIGHT OF BUS 13'-0"
18'-0" MIN. DRIVEWAY
NOTE - 18'-0" MIN. DRIVEWAY FOR 45'-6" MIN. TURNING CIRCLE. WIDTH OF DRIVEWAY MAY BE DECREASED WITH LARGER TURNING CIRCLES.
35'-0" MAX. OVERALL LENGTH
MAX. FRONT OVERHANG 84"
MAX. WHEEL BASE 255"
MAX. REAR OVERHANG 104"
MAX. GAUGE 84"
45'-6" MIN. TURNING CIRCLE
28'-6"
8'-0" MAX. WIDTH
BUS DIMENSIONS AND MINIMUM TURNING REQUIREMENTS
SCALE - 3/64" = 1'-0"
BUS DIMENSIONS ARE COMPOSITE OF 1941 STANDARD DIMENSIONS, NOT TYPICAL OF ANY ONE MANUFACTURER

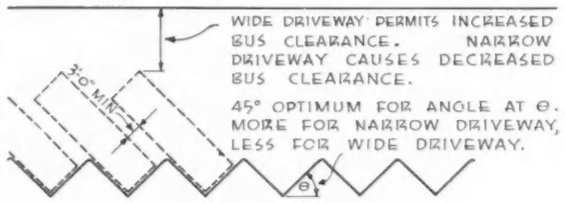


ARCHITECTURAL RECORD
TIME-SAVER STANDARDS

BUS TERMINALS—Loading Docks and Concourse

OCTOBER 1941

Data from Harry S. Pack, Jr.

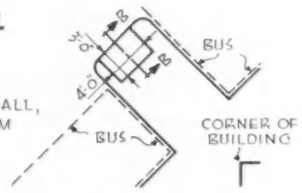

WIDE DRIVEWAY PERMITS INCREASED BUS CLEARANCE. NARROW DRIVEWAY CAUSES DECREASED BUS CLEARANCE.
45° OPTIMUM FOR ANGLE AT θ. MORE FOR NARROW DRIVEWAY, LESS FOR WIDE DRIVEWAY.
3'-0" MIN.
θ

BUS PARKING ANGLES

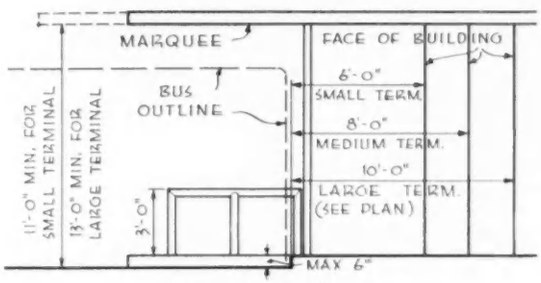
BUS RAMP ANGLES

SECTION "B-B"

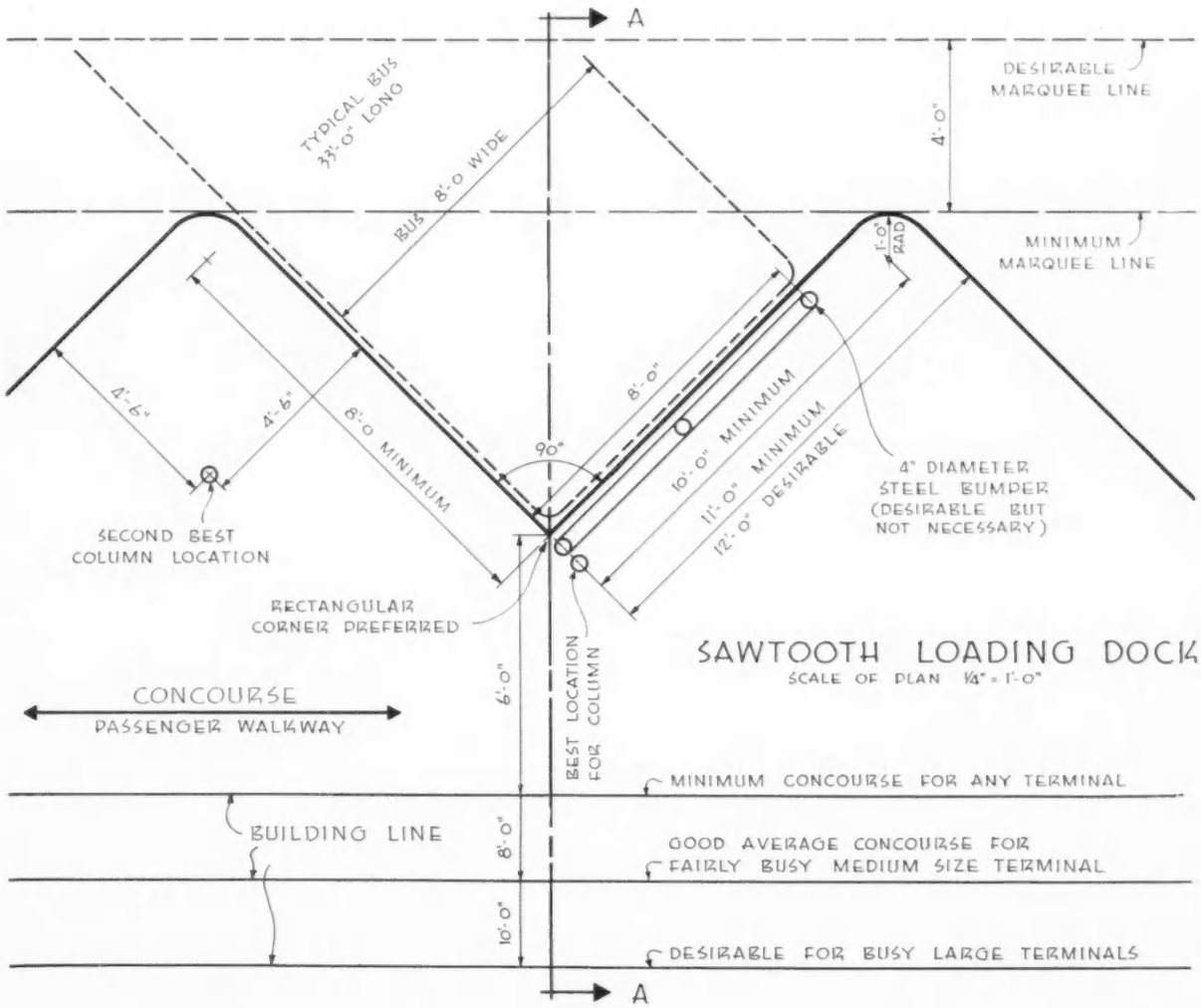
NOTE – ONE RAMP FOR SMALL, TWO OR MORE FOR MEDIUM OR LARGE TERMINALS. LOCATION SHOULD BE ACCESSIBLE.



BAGGAGE TRUCK RAMP



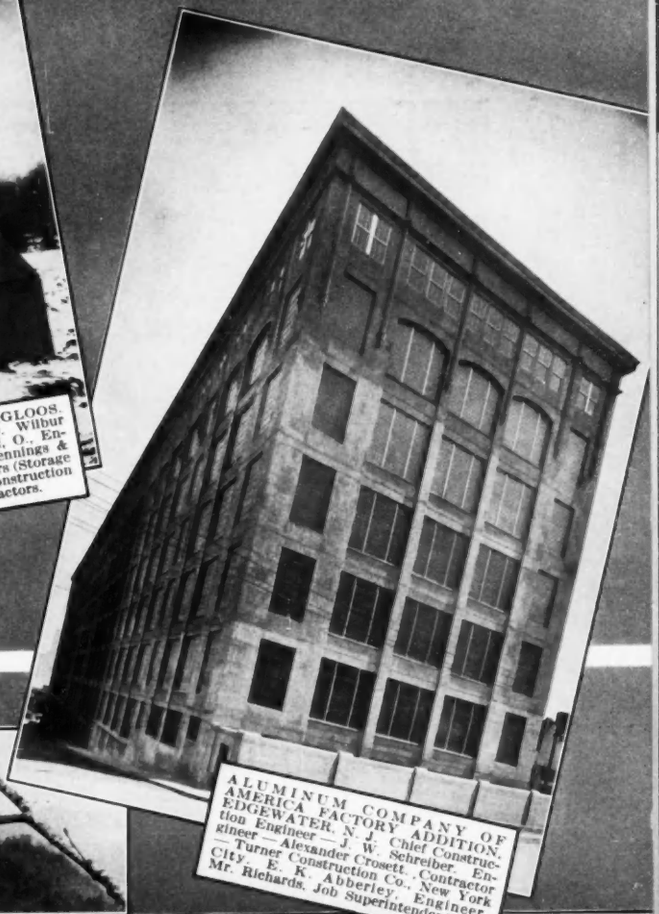
SECTION "A-A"
SCALE 1/8" = 1'-0"



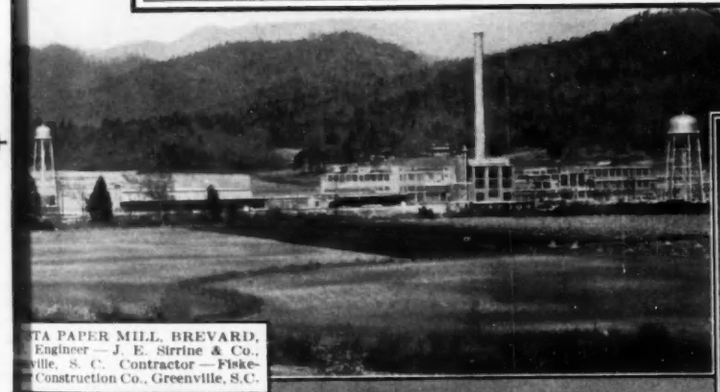
SAWTOOTH LOADING DOCK
SCALE OF PLAN 1/4" = 1'-0"

ONE OF HUNDREDS OF IGLOOS. U. S. Ordnance Plant, Ravenna, O. Wilbur Watson and Associates, Cleveland, O., Engineers (Shell Loading Plant). Jennings & Lawrence, Columbus, O., Engineers (Storage Depot). The Hunkin-Conkey Construction Company, Cleveland, O., Contractors.

Today the wide use of Pozzolith in giant defense works as well as hundreds of private projects is a natural consequence of its ten year record of successful performance.

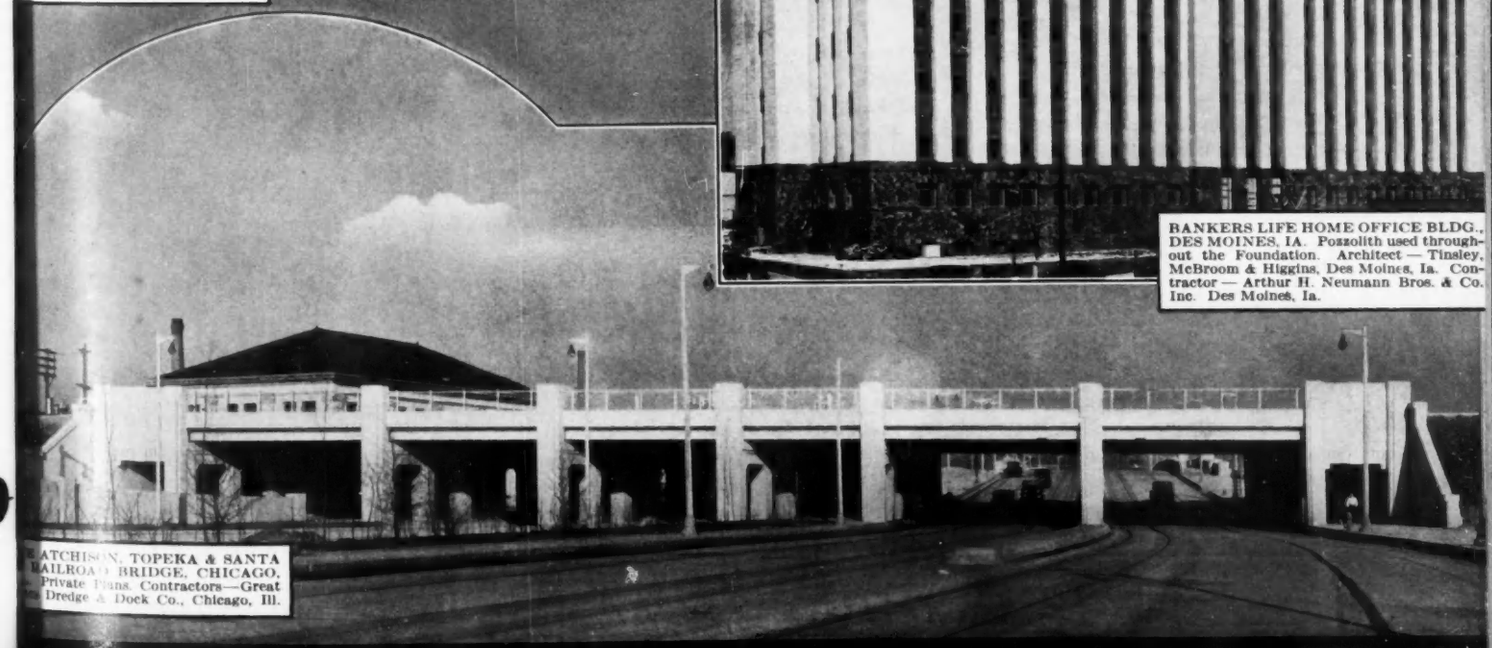


ALUMINUM COMPANY OF AMERICA FACTORY ADDITION, EDGEWATER, N. J. Chief Construction Engineer — J. W. Schreiber. Engineer — Alexander Crosett. Contractor — Turner Construction Co. New York City. E. K. Abberley, Engineer. Mr. Richards, Job Superintendent.



TA PAPER MILL, BREVARD, Engineer — J. E. Sirrine & Co., ville, S. C. Contractor — Fiske- Construction Co., Greenville, S.C.

BANKERS LIFE HOME OFFICE BLDG., DES MOINES, IA. Pozzolith used throughout the Foundation. Architect — Tinsley, McBroom & Higgins, Des Moines, Ia. Contractor — Arthur H. Neumann Bros. & Co. Inc. Des Moines, Ia.



ATCHISON, TOPEKA & SANTA AILROAD BRIDGE, CHICAGO, Private Plans. Contractors—Great Dredge & Dock Co., Chicago, Ill.

MASTER BUILDERS

NEWS OF MATERIALS AND EQUIPMENT

Fig. 1

Planetarium Explores the Universe

FROM the familiar globe-on-a-pedestal to the planetarium, many have been the devices by which men have tried to bring to lay intelligence a conception of the movements in the universe. Now comes an instrument which is notable for its versatility. Embodying an Azimuth Disc, a combination of metallic Circles and Arcs and a pair of interchangeable globes, one Celestial, one Terrestrial, this "planetarium" is said by its designer to solve all problems involving a spherical or astronomical triangle; to determine True North; discover amount of compass error; compute a Great Circle course and distance between any two or more points on the earth's surface; indicate Civil, Standard and Sun Time; identify the constellations and solve many more problems embracing spherical or astronomical triangles, time, Great Circle courses and distances, and phases of the sun's movements. Indoor, outdoor models. Position Finder Corp., P. O. Box 361, San Antonio, Tex. (See figure 1.)

Low-Cost Acoustical Material

MADE of a special-density fibrous composition, a new low-cost acoustical material is announced having a noise-reduction coefficient that reaches 75 per cent. Standard thicknesses ½, ⅝, ⅞ in. Unit sizes: 12 by 12 in., 12 by 24 in. May be installed on any rigid level surface. Armstrong Cork Co., Lancaster, Pa.

Waste Space Utilized for Storage

WASTE SPACE in limited space quarters is utilized by a new device to provide an extra closet, wardrobe, bureau, kitchen cabinet. The expanding unit is installed on the inside of a closet or other door and comes into view as the door is opened. When closed, the unit is said to occupy an inside area less than 2½ sq. ft.; when open, to provide about 15 cu. ft. of storage capacity. Expandor, Inc., 221 W. 57th St., New York City. (See figure 2.)

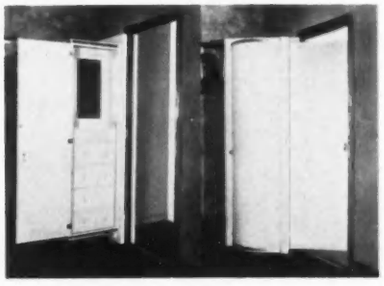


Fig. 2

Self-Raising Toilet Seat

DEVELOPED for public rest rooms and manufacturing plants is a toilet seat consisting of two bakelite seat pads attached to a plastic covered steel rod. A patented spring hinge pulls the seat away from the bowl when not in use, keeping seat dry and eliminating possible damage to bowls from falling seats. Sperzel Sanitary Seat Co., 1033-35 Metropolitan Life Bldg., Minneapolis, Minn.

Blue Print Container

BLUE PRINTS remain flat in a new container which is designed to lay the print out on a bench, hang it on a wall, or for mailing. Designed to hold many prints, to be viewed in sections, and very long prints. Useful in out-of-door jobs. Scrollway Container Co., 1440 Broadway, Oakland, Calif.

Low-Cost Industrial Breaker

LOW-COST is claimed as a feature of a new industrial multi-breaker. The breaker is said to afford extremely economical operation as a motor circuit switch or service disconnect switch. It is fuseless, with bi-metallic strip actuation, visible trip indication and trip free lever. Rated capacity 230 volts from 15 to 100 amperes, in 3 pole, 3 pole solid neutral or 4 pole solid neutral. Enclosed and semi-dust-tight. Factory-set calibration. Cutler-Hammer Inc., Milwaukee, Wis.

Gas-Fired Gravity Furnace

RECENTLY INTRODUCED is a new gas-fired gravity furnace, square or round. The design is said to feature an all-welded steel drum and radiator with long flue travel. 90,000 BTU per hour input, 67,500 BTU output. Mueller Furnace Co., 2005 W. Oklahoma Ave., Milwaukee, Wis. (Fig. 3.)

(Continued on page 110)

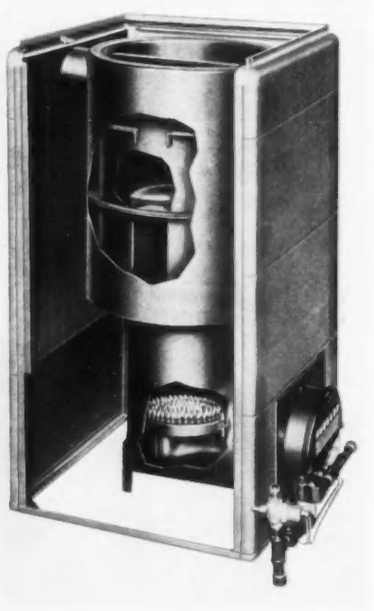
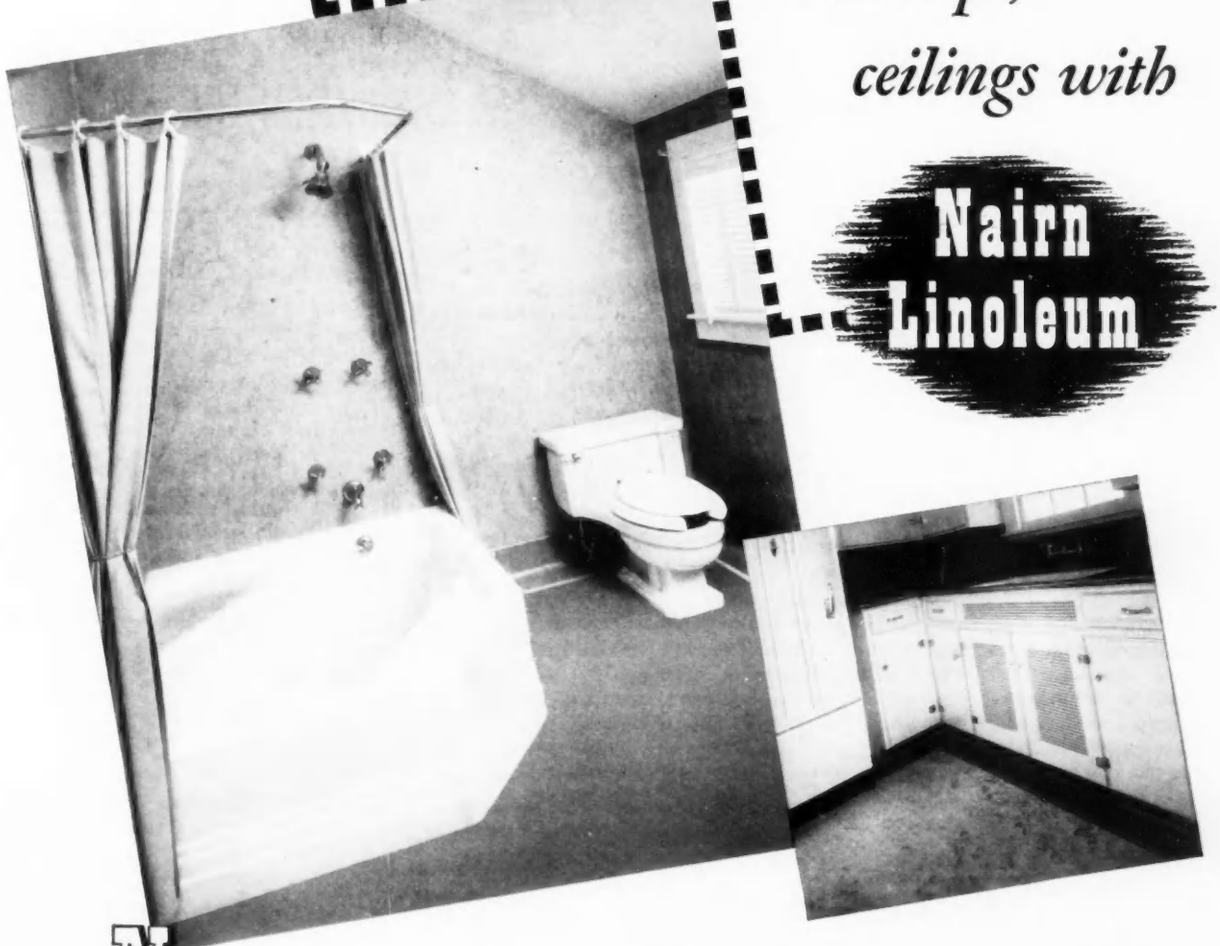


Fig. 3

"Functional" beauty for floors, walls, sink-tops, ceilings with Nairn Linoleum



NAIRN LINOLEUM enables architects and builders to combine utility with real beautyin bathrooms and kitchens —and do it at very moderate cost. Here's a specification that provides clean-cut, *practical* decorative effects obtainable with no other material.

Home owners are becoming more and more enthusiastic about the sanitary features of Nairn floors and walls. They like its stainproof, fadeproof patterns. They like the way it can be formed into coved corners at floor and wall junctions and on sink splashbacks, eliminating dirt-catching cracks and crevices.

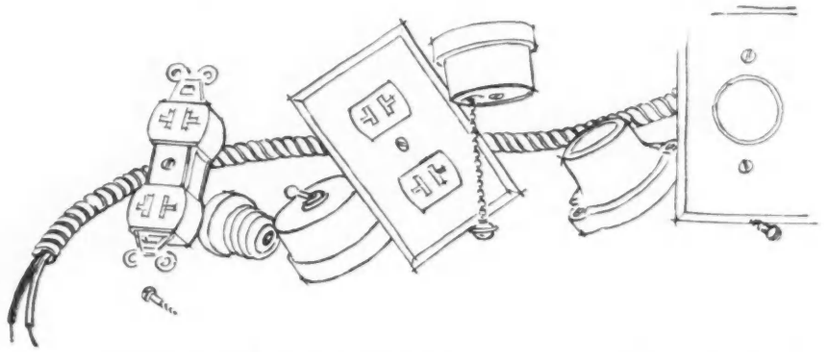
All Nairn wall patterns are Color Correlated with Nairn Linoleum for floors. From among the wide distinctive range of colors and patterns, the architect can create unique treatments. Unusual floor color schemes with contrasting insets and feature strips. Interesting designs on linoleum covered doors using brass nailheads. Or the new "sculptured" effects on Nairn walls, done with *incised lines.*

From any point of view, long-wearing Nairn Linoleum is the ideal residential specification. Moderate in first cost, it requires practically no upkeep. Fully guaranteed when installed by authorized contractors.

CONGOLEUM-NAIRN INC., KEARNY, N. J.

NAIRN

Linoleum Floors and Walls



☆ **ONE OF THE MOST IMPORTANT TECHNICAL TASKS that confronts the architect and engineer is that of co-ordinating, into an efficient structural unit, the great number of materials and items of equipment required for the modern building. Because of this, it is obvious that the selection of a building product must be based primarily on its performance, not as a separate item, but in terms of what it contributes to the building as a whole. And it is therefore quite natural that in this process of integration the product should lose something of its own individuality.**

Doesn't this all suggest a basic clue to the sort of advertising that architects want from building product manufacturers—and need to help them write concise and accurate specifications? To answer the question let's test its application to the general field of electrical equipment. It seems to have three parts.

First, electrical supplies and equipment are generally not usable as self-contained units; most of them must be combined with other items. Thus, since each electrical product is only a more or less important part of a complete electrical system, performance and relative value will be more clearly demonstrated if it is presented in its proper relation to the group. Advertisements discussing motors, panel boards, cables, outlet boxes and the like are not as helpful as those which dramatically illustrate the place of such units in the co-ordinated whole.

Second, the only good excuse for advertising such a product as a separate item is when it is NEWS; when its characteristics make it different, and thus more specifically desirable. Even then it is better to discuss *what* it does, not *how* it does it. Few architects can judge the merits of electrical equipment in all technical aspects. And if they're initially confused by this approach they may lose sight of what the product contributes to the completed structure.

Third, "further information" on the product should be easily available, and the advertisement should say so. The specifying of a "name" product undoubtedly gives the architect a sense of security, but his faith in the manufacturer will soon be lost if he can't obtain whatever data he needs quickly. Whether this takes the form of detail sheets, catalogs or engineering service is beside the point here—what's important is that information in any form should be instantly accessible and compactly presented in a form the architect can use.

In the final analysis, what the architect really wants and needs is advertising that *informs, not claims*—that will lead him to helpful information which will aid him to do his job more efficiently, more quickly and more economically. He doesn't need to learn more technicalities about electricity itself. But he does need a store of facts about products that promote the most efficient use of electricity in order to assure himself and his client the desired result.

—RONALD ALLWORK

ARCHITECTS DISCUSS

HERE ARE THE QUESTIONS ARCHITECTS ANSWER ON THESE PAGES

1. **Do you as an architect** make it a practice to specify electrical supplies and equipment by name? Why?
2. **What is your general impression** of magazine advertisements featuring such items as electrical receptacles, outlet boxes, circuit breakers and wiring?
3. **Would you be interested** in having check lists of electrical supplies and equipment for various types of buildings if offered by a manufacturer?

ARDERY VINCENT DE FONDS, AIA

1. YES. Because it is an easy and definite way to identify an article. "Blank & Co.'s No. 0000" means that and nothing else. Then "or equal as approved by Architect" may be inserted.

2. Frankly, I seldom read the ads so am really not qualified to express an opinion. In other words, the ads make very little impression on me—can't say that they're good or bad.

3. I would be interested in such check lists.

GEORGE DAUB, AIA

1. YES. Because some items take up more space than others. Some are in character with the type of things we do and some are better than others.

2. It makes you think even as to asking your electrical engineer's opinion of what is good or bad, and also it insures the client a good job.

3. A check list by a manufacturer

MEETS ADVERTISING

ELECTRICAL SUPPLIES AND EQUIPMENT

would be a wonderful thing, especially to keep prices down and in the price range of the functioning of the structure. Maybe if this was done for all trades it would be better than publishing plans and elevations for various buildings.

EUGENE HENRY KLABER, FAIA

I DO NOT FEEL that too many electrical items should appear in one ad. Three or four are the most that can be presented effectively. The advertisement should always state where more extended information can be obtained.

I believe that check lists as suggested would be a valuable aid to architects. They might be distributed in quantity with space at the head for the name of the job which is being checked.

RICHARD EVERETT JR., AIA

1. I SPECIFY by name in order to be assured of first grade material.

2. Advertisements could be more diagrammatic and more informative from an architectural point of view.

3. Yes.

FLOYD E. JOHNSON, AIA

1. SPECIFICATION by name eliminates use of inferior material.

2. Very educational and helpful to the building material-conscious public. I have found that the architectural trade magazines are widely read by those outside the profession.

3. Yes.

EBEN D. FINNEY, AIA

WE DO MAKE it a practice to specify electrical equipment and supplies by name, as a standard of quality and type of equipment desired.

Generally speaking, we believe magazine advertisements featuring such items as electrical receptacles, etc., are a good thing and a fairly sure way of keeping the new products before the eyes of the architects and engineers.

We are interested in having check lists of electrical equipment and supplies for various types of buildings, and at the present time have certain of these check lists from various manufacturers.

PIERRE R. L. HOGNER, AIA

1. I USUALLY specify by name—chiefly because I know the product I want and can get technical data regarding its use and performance from a catalog.

2. Since I always read advertisements my impression regarding those about which you ask could probably be called good.

3. Check lists are helpful as reference—for no manufacturer makes new additions too frequently.

ROBERT J. L. CADIEN, AIA

1. THIS is my usual practice. Otherwise we get a so-called "competitive line" which does not stand up.

2. Makes me conscious of the fact that there are practical materials on the market which if used in the proper place will result in a noticeably good, rather than just another, job.

3. Yes.

ELMER ADAMS, AIA

1. IT'S A PRACTICE we adhere to because it allows us to indicate clearly the quality of products desired.

2. So far as presenting technicalities of products are concerned, catalogs are, of course, more complete and therefore better in my estimation.

3. Yes. To the extent that these are a guide to better product use they are helpful.

NEXT MONTH'S QUESTION ON BUILT-UP ROOFING

AS A PRACTICING ARCHITECT, WHAT QUESTIONS OCCUR TO YOU REGARDING BUILT-UP ROOFING WHICH YOU FEEL COULD BE ANSWERED IN MANUFACTURERS' ADVERTISEMENTS?

LET US HEAR FROM YOU! WE'D LIKE TO PUBLISH YOUR ANSWER TO THIS QUESTION. FORMS CLOSE OCTOBER 20.

★ STEEL SASH "MERIT-METER" ★

POINT NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SWORN BASIC FACTS USED ARE FROM 1940 SWEETS CATALOG	Fenestra Basic (F) steel	Fenestra Extra Basic (Fx) steel	Mesker Basic (F) steel	A competitive architectural projected steel window	A competitive projected steel window	Detroit Commercial projected steel window	Detroit Casement (Custom)	Detroit Monumental (Custom)	Detroit Monumental (Intermediate)	Detroit Monumental (Basic)	Truscon Architectural projected steel window	Truscon Casement (Custom)	Truscon Casement (Intermediate)	Truscon Casement (Basic)	Truscon Monumental (Custom)	Truscon Monumental (Intermediate)	Truscon Monumental (Basic)	Truscon Projected (Custom)	Truscon Projected (Intermediate)	Truscon Projected (Basic)	
MESKER	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES	YES	NO	85%
SASH-A	YES	YES	YES	NO	NO	YES	YES	YES	NO	YES	NO	NO	NO	NO	YES	YES	NO	YES	NO	NO	50%
SASH-B	NO	NO	NO	NO	NO	YES	NO	YES	NO	YES	YES	NO	NO	YES	NO	NO	YES	NO	NO	NO	30%
SASH-C	NO	NO	NO	NO	NO	NO	YES	NO	YES	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO	NO	25%
SASH-D	NO	NO	NO	NO	NO	YES	YES	YES	NO	YES	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO	30%
SASH-E	NO	NO	NO	NO	NO	YES	NO	YES	NO	YES	NO	NO	NO	YES	NO	NO	YES	YES	NO	YES	35%

MESKER Steel Sash gives you at least 35% MORE QUALITY for your money!

Send for your Steel Sash Merit-Meter-and PROOF!

Over a third more quality than its nearest competitor . . . that's MESKER'S *proved* claim. Check the Steel Sash "Merit Meter" yourself. It enables you to compare steel window quality, point-by-point. Everyone concerned with steel windows should have a copy of it.

Casement Windows • Monumental Windows • Industrial Windows
Industrial Doors • Metal Screens • Detention Windows

Make the **VISUAL-TEST**

SEE the difference
FEEL the difference
KNOW the difference

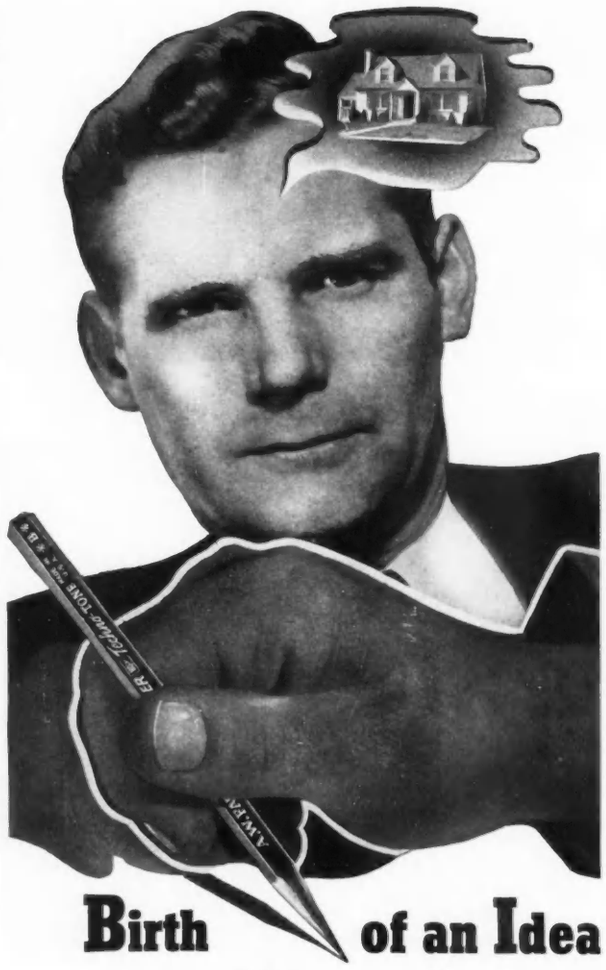
Write today for your Visual Test Kit. It compares the gauge of metal used in weathering bars by Mesker and others. It's Free.

SINCE 1879
Mesker BROTHERS
424 SOUTH 7th STREET
ST. LOUIS, MO.

Send for it now—

MESKER BROS. 424 SO. 7th ST., ST. LOUIS, MO.
Without obligation send us: ☐ Ready Reference Steel Sash Merit Meter
☐ Visual Test Kit ☐ Filewarthy Literature on Mesker Steel Sash
☐ Illustrated Steel Sash Price Book ☐ Mesker Dealer Plan

Firm Name _____ ☐ ARCHITECT ☐ BUILDER ☐ DEALER
Address _____ (GIVE STREET ADDRESS OR P. O. BOX NO.)
City _____ State _____
8 AR-101



Birth of an Idea ...in Graphite!

SOMEONE ASKED one of America's foremost architects where he got his ideas.

"It's like taking divine dictation," replied the architect, "Ideas float around in my head and finally emerge at the end of my pencil."

Men who have made their mark in architecture, engineering, designing and draftsmanship say that A. W. Faber's WINNER Techno-TONE drawing pencil is a wizard at coaxing creative ideas, interpreting them with broad, deep rich strokes. You, too, will do better work with the smoother, grit-free WINNER Techno-TONE, backed by 180 years experience. Your dealer will gladly supply your favorite degrees.

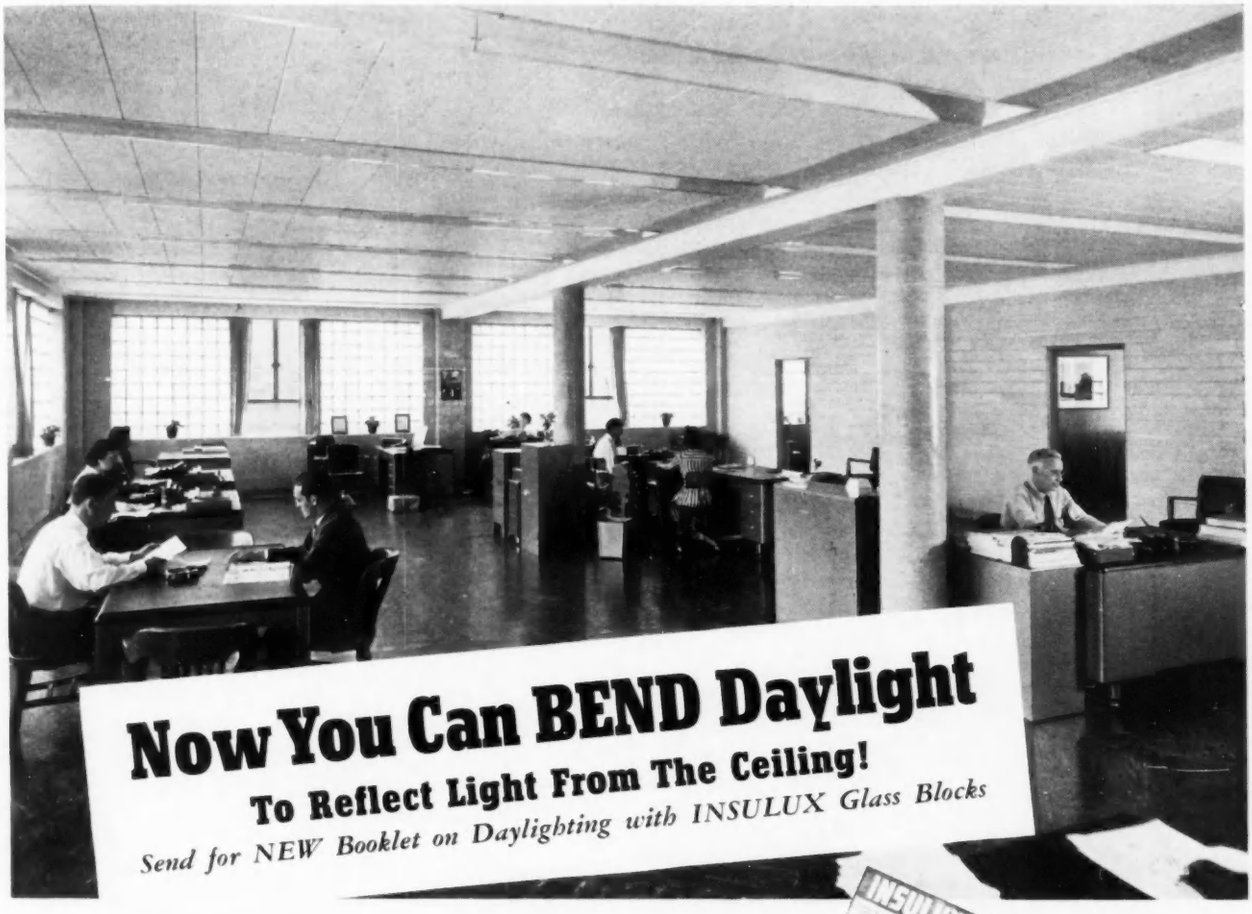
WINNER *Techno*-TONE

***translates* GRAY MATTER *into* BLACK MATTER**

Polished rich green. Packed in metal box. **2 for 25¢**

WINNER *Techno*-TONE
17 Degrees—6B to 9H
"It has the A. W. FABER name on it."

A·W·FABER *Inc.* NEWARK, N.J.



Now You Can BEND Daylight

To Reflect Light From The Ceiling!

Send for NEW Booklet on Daylighting with INSULUX Glass Blocks

INDIRECT DAYLIGHT FROM THE SUN!

Any large interior—factory, office, transport terminal, warehouse—presents the problem of getting effective, even distribution of daylight, without objectionable glare.

Much of the light coming through a window is absorbed by dark floors. But with INSULUX *Prismatic* Glass Blocks, the prismatic design directs light to ceilings, which reflect a high percentage downward to light deep interiors evenly.

INSULUX *Prismatic* Glass Blocks can be used on any exposure without objectionable glare. Installed above eye-level, they refract light upwards. The companion *No-Glare* Block, used in the panel below eye-level, admits diffused daylight. Owens-Illinois Glass Company, INSULUX Division, Toledo, Ohio.

YOU GET IMMEDIATE DELIVERY ON INSULUX GLASS BLOCKS!

OWENS-ILLINOIS

INSULUX

Glass Blocks

YOU NEED THESE FOLDERS IN YOUR DATA FILE . . . .

Three separate file-size folders have been prepared, giving complete data showing how INSULUX Glass Blocks help solve industrial problems of (1) LIGHT (2) HEATING (3) MAINTENANCE.

Each is packed with graphic evidence and facts that will help you in industrial planning.

MAIL THE COUPON TODAY!

OWENS-ILLINOIS GLASS COMPANY
INSULUX Division
26th Floor, Ohio Bldg., Toledo, Ohio

Gentlemen: Please send, without obligation, your 3 *new* folders on (1) Light, (2) Heating, (3) Maintenance.

NAME _____

ADDRESS _____

CITY _____ STATE _____

NEWS OF MATERIALS AND EQUIPMENT

(Continued from page 104)

References on Aluminum

OF SPECIAL INTEREST to manufacturers of defense materials are a series of bulletins which give lists of selected references on aluminum. Aluminum Co. of America, Pittsburgh, Pa.

Rubber Base Metal Coating

A BASE METAL COATING for exposed iron and steel, and also aluminum, copper and galvanized metals, is now made from a chlorinated rubber. It is claimed by the originators that this composition makes the coating impervious to water, highly resistant to acid, alkali, fumes and chemicals, and therefore specially adapted to use in steel mills, pickling rooms, paper plants, dye works, etc. With the addition of a special primer the new coating is also recommended for protecting steel work exposed to salt air. The coating is said to be fast-drying. Standard colors. Truscon Laboratories, Inc., Detroit, Mich.

Data on Cabinet Woods

REFERENCE DATA on principal cabinet woods, covering commercial and botanical names, origin, types of figures available, price range, hardness, how cut and approximate maximum widths and lengths, are available to architects in a handy four-page folder. The Veneer Association, 616 S. Michigan Ave., Chicago, Ill.

Night-Lighted House Numbers

IN LINE with moves in some suburban and rural localities for universal house numbering comes a new type of house address numerals and letters, visible at night. Constructed of small parabolic shapes in relief pattern on the back of a clear plastic which controls and reflects light without glare, the numbers are designed to be illuminated in clear outline at night by the rays from street lamps, and to be visible from a wide angle on either side. Daytime legibility is also said to be good. Lumelite Company, 261 Fifth Ave., New York City. (See figure 4.)

(Continued on page 112)

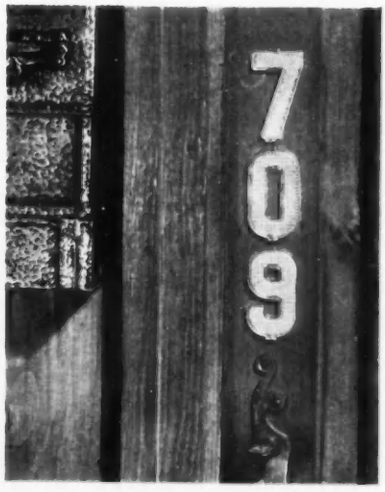


Fig. 4

The performance record of Fedders Unit Heaters, Heating and Cooling Coils, and other associated products is the result of their field-proven engineering. What you get out of heating and air-conditioning equipment is the result of what goes into it. Modern design and highest quality materials which have won the respect of the profession include strong, rigid casings . . . full floating protection against overall expansion between individual tubes . . . permanently bonded fins and tubes . . . large plenum type headers.

Fedders equipment is built in a complete range of well graduated sizes. Progressive manufacturing methods assure prompt deliveries under today's conditions. Write for Catalogs.

FEDDERS MANUFACTURING CO., Inc.
Air Conditioning Division
93 TONAWANDA STREET, BUFFALO, N. Y.
REPRESENTATIVES IN ALL PRINCIPAL CITIES

WHEN IT'S YOUR *Responsibility*

● Every architect knows that a reliable piping system for plumbing and heating is one of the most important factors in the building. It is a surprising fact that a great deal of thought and money is frequently spent on outward appearances, while vital matters are quite often taken for granted. Of course, the home should be modern in design, its kitchen, bathroom and laundry fixtures should be handsome and conveniently located... but unfortunately, good looks do not assure good service.

The efficiency of these modern fixtures and the very livability of the home itself depend upon a permanently reliable piping system for the plumbing and heating — in a word — a STREAMLINE COPPER PIPE AND FITTINGS SYSTEM.

★ *Specify*

STREAMLINE
TRADE MARK REG. U. S. PAT. OFFICE

COPPER PIPE AND FITTINGS

STREAMLINE Copper Pipe connected with STREAMLINE Fittings assures a piping installation that incorporates tremendous resistance to rust, clogging and vibration. More than that, its cost is little, if any higher than materials that corrode and leak after a few yedrs of service.

STREAMLINE affords a permanently reliable conducting system that insures efficient service from fixtures and radiating units year in and year out. With the possible exception of abnormal water conditions, STREAMLINE will outlast the building in which it is installed.

For efficiency as well as appearances, specify STREAMLINE Copper Pipe and Fittings.

STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN

NEWS OF MATERIALS AND EQUIPMENT

(Continued from page 110)

Boiler for Small Homes

FEATURES of a newly announced boiler for small homes include: wet base construction; controlled water travel; multiple-pass flues; provision for internal water heater; manual or automatic firing. Capacity up to 90,000 BTU. Jacketed. Crane Co., 836 S. Michigan Ave., Chicago, Ill.

Insulating Block for Low Temperature

FOR LOW TEMPERATURE work comes an insulating block with mineral base said to be highly moisture-repellant. The manufacturer claims the material will not disintegrate, suffer structural breakdown or decay. Made in block form 36 in. long, 12, 18 and 24 in. wide and ½ to 2 in. thick. It can be cut to fit irregular planes or odd corners. Baldwin-Hill Co., 524 Klagg Ave., Trenton, N. J.

New Cabinet Type Radiator

FOR FREE-STANDING or recessing is a recently announced cabinet type radiator. May be had with or without bottom grille. Pipe connections and control valve are concealed. 28 sizes. Burnham Boiler Corp., Irvington, New York.

Penetrating Finish for Wood Floors

A FINISH for all types of wood floors, recently announced, differs from surface coatings in that it penetrates the wood fibre, forming, it is claimed, a harder, tougher wearing surface. This finish is said to bring out the beauty of the grain, to be easy to clean and maintain, and to retain its newness under hard punishment. Truscon Laboratories, Inc., Detroit, Mich.

Pressure Connector Ground Fittings

A NEW LINE of pressure connector ground fittings for use with conduit wiring, armored wire and unarmored wires was announced recently. Teeth on the connector hubs and on water pipe clamps permit ground conductors to meet water pipes at any angle. The clamps have reinforcing ribs. Malleable iron, galvanized to resist corrosion. General Electric Co., 570 Lexington Ave., New York City.

Ventilator for Dark Rooms

FOR DARK ROOM service in homes or small commercial studios there is a new ventilator which is said to prevent the introduction of light without restricting air flow. A feature stressed is that the motor will not gum up from contact with foul air. The fan can be operated on a light circuit by means of an extension cord and plug. Ilg Electric Ventilating Company, Chicago, Ill.

● Today women are fast coming to see that the *right* sink is *FORMED* IRON—many of them with the advice of *knowing* architects.

They like the graceful styling; the exceptionally high-luster porcelain enamel with its great ease of cleaning; the variety of colors; and the acid-resisting feature at no extra cost.

Then, when these new-day fixtures are porcelain enameled on ARMCO Ingot Iron, the story is complete. For twenty-seven years the good qualities of this "world's standard porcelain enameling iron" have been nationally advertised to millions of American women—and men.

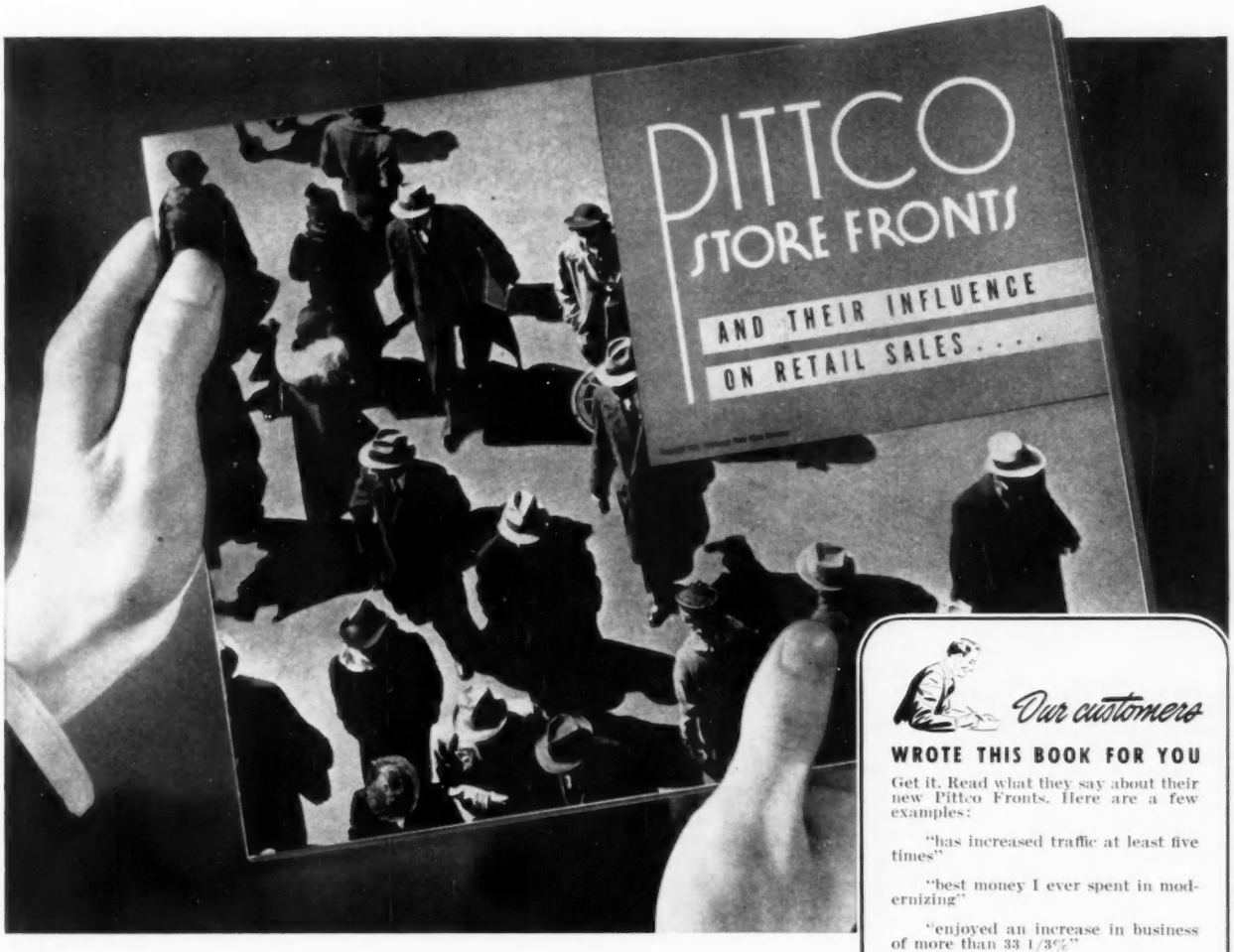
Formed Iron Plumbing Ware (formed, not cast) is an interesting new possibility for architects—sinks, lavatories, bathtubs, laundry tubs, all. Just send a postal card for complete information. The American Rolling Mill Company, 51 Curtis Street, Middletown, Ohio.

Sink fittings made of ARMCO *Stainless Steel are bright, solid metal throughout. With no plating to wear off, they give lifetime satisfaction.*

PORCELAIN ENAMEL ON ARMCO INGOT IRON

ARMCO IRON AND STEEL SHEETS

NEW FREE BOOK SHOWS 40 STORE FRONTS ...that got results!



● We selected forty typical Pittco Store Fronts from among the thousands built recently—illustrating new methods and techniques in store front design and construction.

Photographs of these Pittco Fronts are reproduced in this book. Only lack of space kept us from including many more.

With each picture is a report from the merchant concerned, telling how his new Pittco Front attracted more customers and boosted profits.

Business increases of from 15% to 36% are cited.

Get this book and see the architect-designed Pittco Fronts that made such increases possible. Perhaps some of the design ideas shown may prove helpful to you in working out your own store front problems.

Find out how the use of Pittco Products can help you create original store fronts — store fronts that sell!

Our customers

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Get it. Read what they say about their new Pittco Fronts. Here are a few examples:

"has increased traffic at least five times"

"best money I ever spent in modernizing"

"enjoyed an increase in business of more than 33 1/3%"

"a front like this wins friends for any store"

"innumerable compliments on the design and appearance of the front"

"easily kept clean, retaining its new shiny appearance at all times"

"this modernization has put new life in our organization"

"tremendous asset in attracting people to our store"

"one of the most beautiful jewelry store fronts in America"

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Please send me, without obligation, your new, illustrated booklet, "Pittco Store Fronts — and Their Influence on Retail Sales."

Name_____

Street_____

City_____ State_____

NEWS FROM WASHINGTON

(Continued from page 18)

of 94.4 in July 1917. House furnishings also have advanced to 96.9 as compared with 77.2 during the last war. These figures are on the base of the 1926 average as 100.

In Congressional testimony, Bernard Baruch said that the rent control features of the Henderson bill should be strengthened. As the measure now stands, the President would be empowered to appoint officials to take over the rent situation in defense areas where local authorities cannot keep rents in hand.

Meanwhile, efforts are continuing to develop a rent control bill for the District of Columbia. Since conditions of overcrowding due to the influx of new government workers are painfully apparent to members of Congress, the situation here gives impetus to a national law.

Chairman Jennings Randolph of the House District Committee is working on his third bill. The first, a CIO draft, was too elaborate. The second, a Henderson plan, would allow the President to appoint a rent control administration with powers applicable to all classes of real estate.

The third draft is more simple. Covering only residential real estate and aimed at the lower and middle class housing field, it would freeze rents to the level of September 1940. Local real estate interests are back of the plan to curb the rent gougers. Some Federal facilities are being provided for defense workers.

Graded rents on USHA projects

With the booming of business, many of the families in low-rent projects of the United States Housing Authority are earning more than the maximum family income for which the apartments were planned but are unable to find space elsewhere. Thus the housing authorities in more and more cities are adopting systems of graded rents so that the higher income families will pay a larger share of the project costs and will have an incentive to move into privately owned facilities.

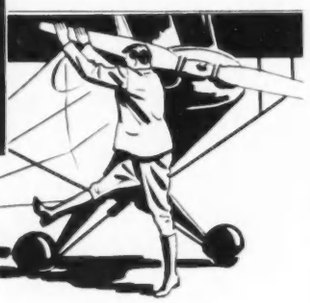
USHA has completed some 17,500 homes for defense workers. Construction on its work under the Lanham Act is 10 per cent ahead of schedule.

The Authority finds it increasingly difficult to get going on projects in the normal slum-clearance program outside the defense housing status. In one region, USHA failed to get bids for five slum clearance projects and had to abandon them.

Defense housing labor appointments

A Defense Housing Branch has been established in Sidney Hillman's Labor Division of OPM. Chief of the Branch is Joseph P. Tufts, formerly director of the Pittsburgh Housing Association. Theodore J. Veenstra of Harrisburg, Pa. will assist as economic analyst. Hillman has also named three members of the Building Trades Stabilization Board of Review, organized to adjust disputes arising under the AFL agreement with the government to prevent stoppages of defense work.

Cocktail Lounge, T.W.A. Terminal, Albuquerque, N. M.



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You will find design suggestions and complete color charts in the Tile-Tex catalog shown in Sweet's, page 11-64. If you wish, our Design Department will be glad to make specific suggestions or submit sketches.

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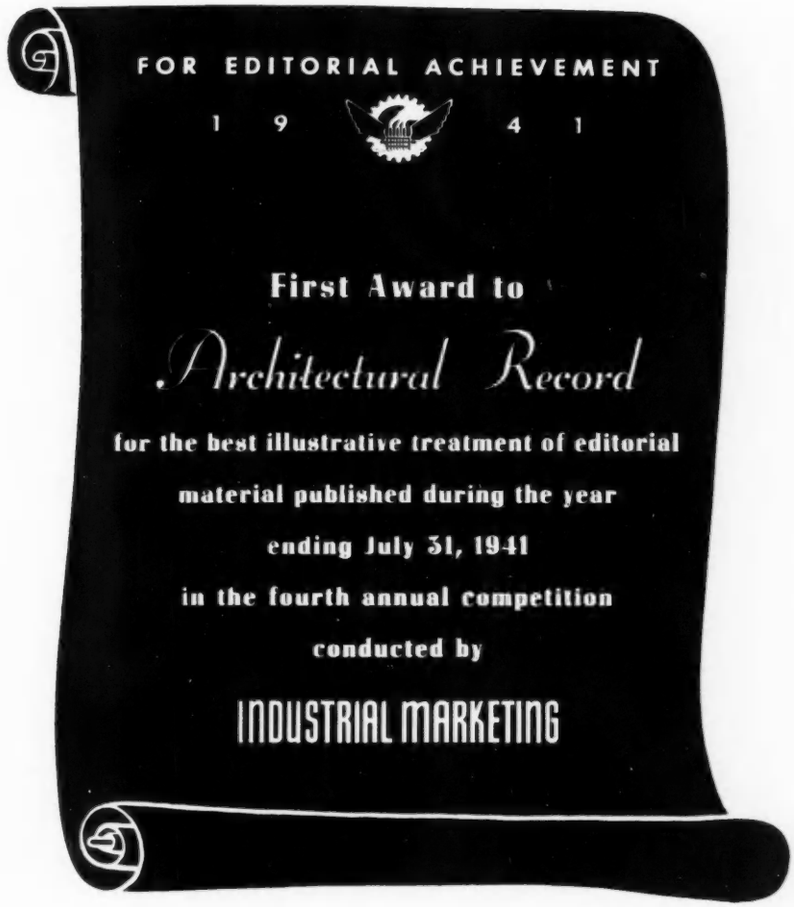

FOR THE SECOND TIME in two years the editors of ARCHITECTURAL RECORD want to share with you who are our readers an accomplishment made possible by your continuing inspiration and support.

The plaque shown above represents an award in an open competition sponsored by the magazine Industrial Marketing—journal for men whose profession is the promotion of industrial and building products.

Among one hundred and one magazine entrants, ARCHITECTURAL RECORD was selected for this honor on the basis of its pictorial reporting of 50 years progress in architecture published in January and February, 1941.

This marks the fourth time in recent years that ARCHITECTURAL RECORD has been singled out for editorial honors. The RECORD is the only publication serving architects and engineers ever to have been so recognized.

ABP *"Direct to the heart of 80% of the building market"* ABC

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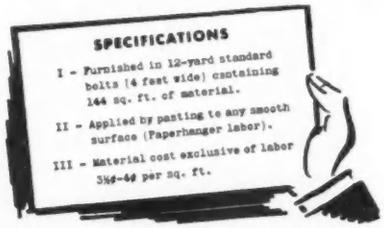
RESULT: Equivalent to brushing three coats of finest paint on a previously canvassed surface.

ADVANTAGES: Provides permanently washable, abuse-resistant surface designed for minimum maintenance cost over long-term period. *Puts a tough hide on plaster.* Gives wallboards and plywoods a rich, substantial decorative finish. An excellent medium for restoring old plaster walls and ceilings. Saves reconditioning expense in any future decoration!

Swatch Book • 47 Plain Color & Texture Effects on Request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I - Furnished in 12-yard standard bolts (4 feet wide) containing 144 sq. ft. of material.
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III - Material cost exclusive of labor 3½-4¢ per sq. ft.

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DEFENSE HOUSING CRITICAL LIST

THIS LONG-AWAITED critical list of materials and equipment for which priority assistance may now be given to privately financed defense housing projects, along with the general plan for granting these priorities (see page 39), is expected to break a bottleneck of serious proportions. It is the official list developed jointly by the Priorities Division of OPM and the Defense Housing Co-ordinator, and is given below verbatim. Intended primarily as a guide for priorities action, it will also prove invaluable in the study of conservation methods and substitute materials for all types of building construction.

NOTES:

1.—This list is based upon the critical position of the materials involved as of the date of issue hereof and since that position may change at any time this list is subject to revision whenever affecting circumstances warrant such action.

2.—Herein included are all items for which priorities assistance will be given for the construction of defense housing, including Government owned, or assisted, and privately financed. Any materials under priority control not listed herein and which may be deemed essential in a given project by those constructing it, shall be handled as an independent item for priority consideration and will be considered on its merits in relation to that project.

3.—Any material not requiring priority assistance may be used in any defense housing project at the discretion of those constructing the project, provided such use of the material is consistent with any other regulation that may govern the project.

4.—The preference rating granted to a project will apply only to the materials listed herein and only in such quantities as the Office of Production Management may permit under the order granted. This limitation, unless otherwise defined shall lie within the limits of good practice.

STEEL AND IRON—*to include only:*

1. Reinforcing steel, including rods, mesh, fabric, tie wire and accessories, for concrete and masonry construction.

2. Structural members—*to include only:*
- **a.** Bearing plates, under 6 pounds.
- **b.** Joist hangers—multi-family dwellings only.
- **c.** Anchors, bolts, tie rods, dowels and cleats.
- **d.** Angle lintels—over openings in veneer masonry walls only.

3. Steel stairs, rails, etc.—only for multi-family dwellings where necessary for fire hazard protection—concrete preferred. Uncoated ferrous metal.

4. Insect screen mesh—*made only of:*
- **a.** Painted steel.
- **b.** Thin coat galvanizing and lacquered.

5. Fire doors and their frames for multi-family dwellings only—wood cored with terneplate covers.

6. Roofing devices, flashings, half-round gutters, hangers and downspouts—*to include only:*
- **a.** Steel not heavier than 26 gauge, uncoated or phosphated treated and painted, or zinc coated by electrical process and phosphate treated and painted, or 2 lb. lead.
- **b.** Gravel stops, as for item "a" or asphalt dipped steel.
- **c.** Roof ventilators (aspirator type) as for item "a."
- **d.** Termite shields for infested areas only—as for item "a."
- **e.** Wire basket strainers only for downspouts connected to sewer lines—zinc coated.
- **f.** Scuppers, and downspout connections for flat roofs—ferrous metal zinc coated.

7. Lath—*to include only:*
- **a.** Ferrous metal, paint dipped. Limited to fire-resisting partitions, ceilings and soffits, and to wall tile bed base, and where gypsum lath and gypsum plaster is not permitted.
- **b.** Corner reinforcing—ferrous metal, paint dipped. Limited to not more than 2½ inch lap on each surface of internal angles and on each surface where different kinds of plaster base abut each other. Corner beads for vertical corners only, paint dipped ferrous metal generally, zinc coated only where exposed to moisture or extreme conditions of humidity.
- **c.** Exterior stucco base, woven or welded fabric, non-metallic coated; zinc coated before fabrication, optional in California coastal district only.

8. Builders and Cabinet Hardware—with parts of steel or iron only except necessary bushings and pin tumbler assemblies of brass or bronze and, optionally, latch bolts, dead bolts, and stop buttons in exterior lock assemblies of brass or bronze; knobs, push plates, drawer and other pulls of glass or other non-metallic material. Exposed steel parts for exterior use, Japanned or primed for painting, lacquered over phosphate coating or cadmium coated, and excluding finishes of zinc coating, nickel or chromium plating except as below noted.
- **a.** Nails, screws, bolts, nuts and washers ferrous metal generally uncoated; zinc coated, optional, for roof coverings and wall ties only.
- **b.** Wall ties zinc coated for masonry veneer over frame construction.
- **c.** Pulleys and sash balances.
  (1) Uncoated Japanned or primed for painting, ferrous metal.
  (2) Electroplated zinc on ferrous metal spiral and similar sash balances.
  (3) Weights, cast iron.
- **d.** Self-releasing fire exit-devices, as for builders hardware above.
- **e.** Wood venetian blind hardware and shade fixtures, ferrous metal, primed for paint or lacquered.

NOTE: Hardware used exteriorly under extreme exposure conditions—as in salt air, zinc coated in lieu of as above listed.

9. Glazing points, zinc.

ELECTRICAL—*to include only:*

NOTE: Roughing in material limited to the recommendations of the electrical supplies industry on file in the Priorities Section, Office of Production Management.

1. Underground materials.
2. Overhead materials.
3. Entrance (main) service switch and meter pan or receptacle.
4. Meter.
5. Circuit breaker type distribution panels.
6. Fuse type distribution panels including fuses.

7. Interior wiring method.
- **a.** For non-fireproof construction:
  (1) Knob and tube, wire and fittings.
  (2) Wire, and non-metallic sheathed cable.
  (3) Flexible metallic conduit and armored cable, zinc coating limited in thickness to that of standard electroplate for this material.
- **b.** For fireproof construction:
  (1) Wire.
  (2) Rigid steel conduit, enameled.
  (3) Flexible metallic conduit or armored cable, coated as above noted.

8. Conduit fittings, outlet boxes and wiring devices—number limited, see Note.

9. Plates—switches and convenience outlets, non-metallic.

10. Lighting Fixtures—except aluminum and solid brass or bronze, copper and brass plating permitted.
- **a.** Indoor fixtures, light gauge spinnings, stampings and drawings; non-metallic (glass, plastics, porcelain, etc.) wherever practicable.
- **b.** Outdoor fixtures and standards, cast and wrought ferrous metal only.

11. Electrical accessories.
- **a.** Wiring, bells, buzzers, push buttons and transformers—multi-family dwellings only.
- **b.** Lock releases—multi-family dwellings only.
- **c.** Entrance Door Communication—multi-family dwellings only.
- **d.** Public telephone systems.

PLUMBING AND GAS DISTRIBUTION SYSTEMS—*to include only*:

1. Cast or stamped ferrous metal, enameled and vitreous ware plumbing fixtures, the latter wherever practicable.
2. Fixture Fittings and Trimmings—Base metal limited to ferrous metal, yellow brass and zinc die castings with plating of flashed copper and nickel or unplated.
3. Drainage and Venting Systems—*to include only*:
   - a. Cast iron pipe and fittings.
   - b. Galvanized steel pipe, wrought iron pipe and malleable fittings generally non-metallic coated.
   - c. Ferrous metal and brass tubing traps, clean-outs and connections for fixtures (Brass limited to minimum necessary).
4. Water Distribution Systems—*to include only*:
   - a. Galvanized steel or wrought iron pipe and malleable fittings, or cement lined cast iron pipe and fittings—lead wherever practicable, *inside buildings only*.
   - b. Valves—iron and brass (brass limited to minimum necessary and used for seats only wherever practicable).
5. Water Heaters (storage type) and Hot Water Storage Tanks—*made only of*:
   - a. Galvanized sheet—only where local conditions necessitate.
   - b. Black steel, painted.
   - c. Coated steel (Enamel or glass lined)
   - d. Brass valves, connections and controls for water heaters.
   - e. Copper coils for storage type hot water generators and heat exchangers—multi-family systems only.
6. Water Softeners for multi-family dwellings only, to have painted steel exteriors, interiors as for water heaters, etc.
7. Gas Distribution System—*only for items noted below*:
   - a. Black steel pipe and fittings.
   - b. Valves as for water distribution systems.

HEATING AND VENTILATING EQUIPMENT—*to include only*:

1. Boilers—*Furnaces only for items noted below*:
   - a. Boilers—ferrous metal with brass safety devices and cocks, limited to minimum practicable.
   - b. Furnaces—ferrous metal with zinc coated casings, interliners and baffles for gravity furnaces and with zinc coated interliners where used in forced warm air furnaces.
   - c. Breechings—ferrous metal non-metallic coated.
   - d. Floor furnaces, space heaters, stoves and other similar heating devices, wherever practicable and where they may replace the above.
   - e. Vents for heating equipment in demountable houses—ferrous metal, non-metallic coated.
2. Accessories—*consisting only of*:
   - a. Pumps.
     - (1) Water Circulators
     - (2) Condensation
     - (3) Vacuum R.L.
   - b. Fans, Blowers and Motors—Centrifugal—forced warm air systems only.—Propeller—large exhaust on large multi-family units.
   - c. Oil Storage Tanks, ferrous metal—non-metallic coated, size limited to minimum necessary, for example, not to exceed 275 gallons capacity for plants serving less than five families).
   - d. Expansion tanks for hot water systems—ferrous metal, non-metallic coated.
3. Distribution Materials—*consisting only of*:
   - a. Piping—ferrous metal, uncoated.
   - b. Fittings—Cast ferrous metal, uncoated.
   - c. Valves.
     - (1) Vent—Ferrous metal wherever practicable, yellow brass elsewhere, no plating.
     - (2) Gate—ferrous metal wherever practicable, yellow brass elsewhere, no plating.
     - (3) Globe—ferrous metal wherever practicable, yellow brass elsewhere, no plating.
     - (4) Cocks—ferrous metal wherever practicable, yellow brass elsewhere, no plating.
   - d. Traps—central steam systems for multi-family dwellings only.
     - (1) Boiler return.
     - (2) Blast.
     - (3) Bucket.
     - (4) Float and thermostatic.
   - e. Ducts and connections.
     - (1) Ferrous metal phosphate treated and painted or untreated.
     - (2) Bright tin.
   - f. Hangers and brackets.
     - (1) Strap iron.
     - (2) Cast iron.
4. Radiators, Convectors and Registers—*only for items noted below*:
   - a. Radiators and convectors of cast iron, without metal enclosure.
   - b. Valves.
     - (1) Radiator, yellow brass unplated.
     - (2) Air Valves, yellow brass unplated.
   - c. Traps—Radiator, for multi-family dwellings, only, yellow brass unplated.
   - d. Registers and Grilles.
     - (1) Stamped or cast ferrous metal.
     - (2) Fabricated steel optional for large units in floor.
5. Firing Equipment—*only for items listed below*:
   - a. Oil, gas and coal burners.

   NOTE: Oil burners eliminated from eastern seaboard area.
6. Control Equipment—*only for items listed below*:
   - a. Damper Regulators.
   - b. Thermostats.
   - c. Pressure Controls.
     - (1) Pressure Reducing Valves—*Multi-family only*.
     - (2) Pressure stats.
     - (3) Pressure Relief Valves.
   - d. Relays.

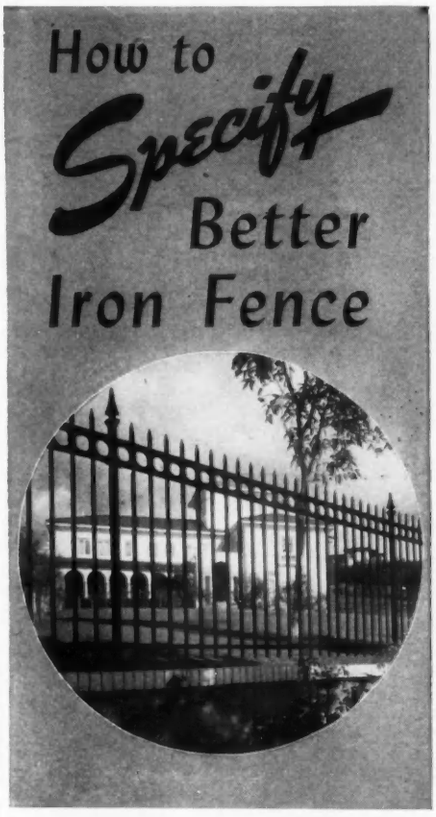
NOTE: Above items to be reduced to minimum and plating eliminated.

HOUSEHOLD EQUIPMENT—*to include only*:

1. Ranges and Refrigerators (as available in the industry).
2. Incinerator hardware and fittings—ferrous metal, of non-metallic coated, multi-family dwellings only. Incinerator proper, of non-metallic material only.
3. Refuse receptacles—metal cans, zinc coated, modified as per Federal specifications or phosphate treated and painted.

LAND DEVELOPMENT ITEMS—*only as noted below*:

1. Wells—Reinforcing Mesh for dug well slabs only.
2. Well Casings—Ferrous metal, zinc coated only where local conditions make necessary.
3. Pipe Lines and Connections for water and gas distribution systems, as below:
   - a. Pipe and Fittings, ferrous metal; zinc coated pipe only in smaller sizes or where local conditions require.
   - b. Fire Hydrants—ferrous metal with brass limited to minimum necessary for working parts.
   - c. Valves and stop cocks—ferrous metal where possible, otherwise with brass working parts.
   - d. Valve boxes, small—cast ferrous metal.
4. Storage Reservoirs—*only for items listed below*:
   - a. Reinforcing steel.
   - b. Elevated Steel Tanks and Supports.
5. Manholes—Ferrous metal covers and frames and step bars—*for streets only*.
6. Water and Sewage Treatment Plants *to include only*:
   - a. Reinforcing Steel.
   - b. Cast or other ferrous pipe.
   - c. Valves and fittings.
   - d. Septic tank fittings, ferrous metal non-metallic coated. Tanks, non-metallic only.
7. Drainage and Culverts *to include only*:
   - a. Reinforcing Mesh.
   - b. Inlet Frames and Gratings—Cast ferrous metal.
   - c. Ferrous metal gaskets and bands where required for reinforced concrete drainage pipe.
   - d. Ferrous metal angles for inlet throats in gutters.
8. Pumps—*to include only*:
   - a. Shallow and Deep Well.
   - b. Pressure Tank—phosphate treated ferrous metal painted, zinc coated where local conditions require it.
9. Electrical Service; extensions from distribution systems—overhead and underground materials of metal or with metallic components (except metal light standards).



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FOR PERMANENCE, specify welded construction plus rails as heavy as pickets. Anchor-Weld Iron Picket Fence has rails of the same weight as the pickets, assuring permanent alignment, freedom from sagging under heavy loads, stresses and strains.

FOR BEAUTY, specify construction which eliminates center supports or ugly cross-bracing. Anchor-Weld Iron Fence Panels require no center support or cross-bracing to mar the beauty of design, yet each panel will support one ton of distributed load. Learn how Anchor-Weld Iron Picket Fence lives up to these ideal Fence Specifications. Mail the coupon below for catalog and a Sample Weld (makes an attractive paper weight). No obligation, of course.

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6600 Eastern Avenue, Baltimore, Md.
Please send me Anchor-Weld Iron Fence Catalog and name of nearest Anchor Fence Engineer.

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